

The leader in network knowledge

# NetworkWorld

July 16, 2001 Volume 18, Number 29

The network portal: [www.nwfusion.com](http://www.nwfusion.com)

## Personality TRANSPLANT tools

End users typically have their PCs set up exactly the way they like them, with their own particular shortcuts, settings and bookmarks. We tested five tools that allow you to keep the end user's unique PC 'personality' intact when rolling out new hardware.

Page 39

**NetworkWorld**  
REVIEW  
Migration tools

## Web-based mail clients still don't measure up

BY JOHN FONTANA

Lotus' release last week of its latest browser-based Notes client again raises the question of whether full-fledged e-mail and collaboration "fat clients" are soon to go the way of the dinosaur.

The answer would appear to be not anytime soon.

Although thin clients such as Lotus iNotes Web Access are finding their niche, the promise of a browser-based front end that can match the

enterprise worthiness of a native client for corporate messaging and collaboration is no closer to reality than it was when a thin-client revolution was first touted three or four years ago.

"It's foolish to say the fat client is here to stay, but it won't go away in a hurry," says Jason Williams, product manager for deskless collaboration at Novell.

See **Messaging**, page 16

[www.nwfusion.com](http://www.nwfusion.com)  
**THICK OR THIN?**

Find out why IT managers anticipated a rise in employees who access their e-mail via a browser-based client.

**DocFinder**  
**5252** online

## Linux lends a hand to Sun engineers

BY JOHN COX

MOUNTAIN VIEW, CALIF. — Sun is rolling out a critical customer service application on an operating system that's almost completely untried for handheld devices — Linux.

Why Linux? Sun says the open source operating system has shown itself to be reliable, adept at handling multiple ap-



Picking Linux was "gut wrenching" for Sun's Greg Richards.

plications and inexpensive. Sun rejected far more prevalent handheld operating systems, such as Windows CE and Palm OS, for a variety of ideological and technical reasons.

Sun's multimillion-dollar project could prove to be a showcase for handheld Linux in an enterprise network. But don't expect Linux appliances to be as ubiquitous or as interoperable as stereo components any time soon. The Sun project has been a year in the making, entailing a lot of custom software and hardware development, and requiring close cooperation among vendors.

Going with Linux was a "gut-wrenching" decision for Greg Richards, senior manager

See **Sun**, page 14

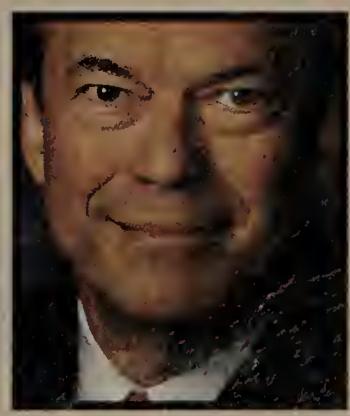
New Novell CEO:

**'I can create change'**

**NetworkWorld Q&A**

Jack Messman, who took charge as Novell's CEO last week upon completion of the company's merger with e-business consulting firm Cambridge Technology Partners, is intent on transforming Novell from a software-oriented company into a services-focused one.

Network World Senior Editor Deni Connor spoke with Messman last week, posing questions collected from enterprise network professionals.



How will Novell differentiate itself among its e-business consulting and services competitors?

First, we will focus on different vertical markets [government, transportation, healthcare, others] where we can better understand the business of our clients.

Secondly, we have a See **Messman**, page 53





## INTRODUCING THE FASTEST STORAGE SOFTWARE ON EARTH.

### BrightStor™ Enterprise Backup

What good is storage software if it isn't fast enough to back up all of your critical information?

BrightStor Enterprise Backup sets a new standard for high-speed storage software, which means you don't have to pick and choose what data to protect. So if you're looking for the best storage solution for UNIX, Windows NT, and Windows 2000, you just found it.



Computer Associates™

HELLO TOMORROW

WE ARE COMPUTER ASSOCIATES

THE SOFTWARE THAT MANAGES eBUSINESS™

[ca.com/brightstor](http://ca.com/brightstor)

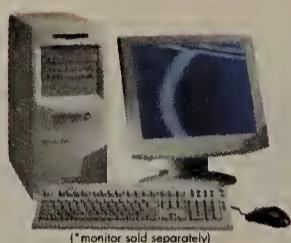
©2001 Computer Associates International, Inc. (CA). All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

# for a limited time, a small investment can make a big difference



## hp vectra vl400

Intel® Pentium® III Processor 1GHz  
12BMB SDRAM  
20GB Ultra-ATA66 Hard Drive  
Intel Direct 3D AGP Video  
4BX MAX CD-ROM  
Integrated PCI Audio  
10/100 Base-T NIC  
Microsoft® Windows® 98 SE  
3 Year, Next Business Day,  
Onsite Warranty  
**\$999**  
SKU# P4151T  
you save \$250



## hp vectra vl800

Intel® Pentium® 4 Processor 1.3GHz  
12BMB 1 RIMM PCBOO RDRAM  
20GB Ultra-ATA100 7.2K RPM Hard Drive  
ATI Rage12B 16MB Video  
4BX MAX CD-ROM  
Multimedia KB  
10/100 Base-T NIC  
Microsoft® Windows® 2000  
3 Year, Next Business Day,  
Onsite Warranty  
**\$1,149**  
SKU# P3224T  
you save \$100



## hp omnibook xe3

Intel® Pentium® III Processor 850MHz  
14.1-in XGA TFT Display  
12BMB SDRAM  
20GB Hard Drive  
1.44MB Floppy Drive  
BX MAX DVD-ROM  
Integrated 56K Modem and 10/100 LAN  
9-Cell Lithium-Ion Battery  
Microsoft® Windows® 98 SE  
1 Year Limited Worldwide Warranty  
**\$1,699**  
SKU# F2337WT  
you save \$300



## hp netserver e800

Intel® Pentium® III Processor 866MHz  
133 MHz Front Side Bus  
12BMB ECC SDRAM Expandable to 2GB  
Embedded Dual Channel Ultra-2  
SCSI Controller  
40X MAX CD-ROM  
3.5-inch, 1.44MB Flexible Disk Drive  
HP NetServer Navigator  
3 Year, Next Business Day,  
Onsite Warranty  
**\$949**  
SKU# P2457A  
you save \$490



## hp netserver lp 1000r

Intel® Pentium® III Processor B66MHz  
133MHz Front Side Bus  
256KB ECC L2 Cache  
256MB SDRAM  
Embedded Dual Channel Ultra-160  
SCSI Controller  
Dual Embedded 10/100 Base-TX NIC  
24X Max-Speed IDE CD-ROM  
3.5" 1.44MB Flexible Disk Drive  
64-Bit I/O  
1U Rack-Optimized Form Factor  
3 Year, Next Business Day,  
Onsite Warranty  
**\$1,499**  
SKU# P1810A  
you save \$475



## hp netserver lp 2000r

Intel® Pentium® III Processor 866MHz  
133MHz Front Side Bus  
256KB ECC L2 Cache  
256MB SDRAM  
Embedded Dual Channel Ultra-160  
SCSI Controller  
Dual Embedded 10/100 Base-TX NIC  
4BX Max-Speed IDE CD-ROM  
3.5" 1.44MB Flexible Disk Drive  
3 Open 64-Bit PCI Slots  
Redundant Power Supply Option  
2U Rack-Optimized Form Factor  
3 Year, Next Business Day,  
Onsite Warranty  
**\$1,999**  
SKU# P1824A  
you save \$580



pentium® III

Call 1.800.307.6397, contact your local reseller,  
or visit [www.hp.com/go/bizsku16](http://www.hp.com/go/bizsku16)

HP PCs use genuine Microsoft® Windows®  
[www.Microsoft.com/piracy/howtotell](http://www.Microsoft.com/piracy/howtotell)



JULY 16, 2001

- 8 CA customers high on latest Unicenter.
- 10 Here's what any sale of **AT&T Broadband** to **Comcast** might mean to you.
- 10 **NFR Security** unleashes high-speed intrusion-detection appliance.
- 10 **Tripwire** set to watch over **Cisco** routers.
- 12 **Cabletron** sets Aug. 6 as its final day of existence.
- 12 **Jamcracker** beefs up application integration platform.
- 14 **Sun's** Linux-based handheld devices please Sun testers.
- 53 Customers applaud latest **Novell** recovery plan.

## Infrastructure

- 19 **Novell** unchains storage options.
- 19 Roundtable looks at **InfiniBand** issues.
- 22 **Dave Kearns**: Keeping an Open Mind.

## Carriers & ISPs

- 23 Some **CLECs** are on path to success, recent report suggests.
- 23 **AT&T Wireless** leaves the nest as part of AT&T restructuring.
- 24 W3C releases draft of **SOAP** standard.
- 24 **Johna Till Johnson**: Why incumbent carriers have an advantage.

## The Edge

- 25 **Dorado** wants to simplify element management.
- 25 **ADVA** pushing new network-planning tool.

## Enterprise Applications

- 29 **Myfujifilm.com** turns digital systems over to ASP.
- 29 **WebTrends** lets customers harvest site traffic.
- 30 **Scott Bradner**: Attacks on individual rights show no let-up.

## Technology Update

- 31 **HyperTransport** boosts bus speeds.
- 32 **Mark Gibbs**: Doing the database shuffle.

## Management

- 42 **Making IT accountable**: Internal service-level agreements outline your obligations to corporate departments that use the network.



CEO Patel will remain adviser to Cabletron spinoff as parent company closes shop.

Page 12



Field engineers say Sun's new Linux devices are pretty handy.

Page 14



Intel's Jim Pappas says InfiniBand will make it easier to add more servers.

Page 19

## Firewall POWER



NetworkWorld

REVIEW

Firewall/VPN

NetScreen's enterprise-level firewall/VPN appliance wins high marks for its impressive performance and aggressive price.

Page 36

## Personality TRANSPLANT tools

Altiris PC Transplant Pro wins our test of personality transfer utilities. Desktop DNA from Miramar Systems and Personality Transport Professional from Tranxition tie for second.

Page 39



**Editorial:** Creative thinking from the BIOS demigod. Page 34.

**Daniel Blum:** In real life, smart cards are gaining on passwords alone. Page 35.

**Thomas Nolle:** Waiting for the next shoe to drop. Page 35.

**Backspin:** Personal information: IT's responsibility. Page 54.

**'Net Buzz:** Spoofed e-mail gives Novell yet another headache. Page 54.

Net Know-It-All.....Page 16

Ask Dr. Internet.....Page 31

Message Queue .....Page 42

Editorial and advertiser indexes.....Page 52

# Smart Choice.

## AIT1 Advantage Drive.



For information regarding a FREE trial offer—  
call 1-800-447-1345.

AIT is smart technology that grows with your business. And the AIT1 tape drive is a great way to get started. For DDS and other tape users who are outgrowing their format's capacity, the new AIT1 tape drive is a smart choice. It delivers powerful AIT advantages now at a more affordable price:

- **SUPER CAPACITY** (90GB maximum compressed)
- **RAPID SUSTAINED DATA TRANSFER** (10MB/s compressed)
- **FAST FILE ACCESS** (<27 seconds, average)

Beyond capacity and speed, Sony's AIT drives and media are co-engineered to deliver value and reliability. And the latest generations of the AIT family, like AIT-2 and AIT-3, offer an ideal upgrade path as your business grows.

To learn more about the AIT1 tape drive—and the complete family of AIT products—visit our Web site at [www.aittape.com](http://www.aittape.com)



**AIT. Intelligently engineered.**



**SONY**

# NetworkWorldFusion

www.nwfusion.com

## FORUMS

### New Windows 2000 help desk forum

We've been getting a fair number of Win 2000 questions lately, so we've set up a dedicated Win 2000 forum. Post away, browse the questions or see if you have an answer. **DocFinder: 5233**

### SPOOLSV

Win 2000 freezes and after reboot, SPOOLSV practically takes over the CPU. What to do? **DocFinder: 5234**

Win 2000 VPN makes desktop disappear. What's a user to do? **DocFinder: 5235**

### Can't mirror disks with Win 2000

Yet another pesky Win 2000 issue. **DocFinder: 5236**

### NetWare help desk

NetWare fans needn't feel left out — we have a forum for your questions and answers. **DocFinder: 5237**

## NEWS

### Breaking news

Need to stay up-to-date on everything from security and net management to Gigabit Ethernet and Win 2000? Check out our topic-specific, breaking-news pages, which feature the latest news and resources on networking topics from *Network World* and around the 'Net. **DocFinder: 5238**

### Telecommuting news

The latest telecommuting headlines from NetWorker and *Network World* as well as a research page of links to publications, forums, government regulations and case studies are waiting for you. **DocFinder: 5238**

### Product & Solutions Directory

The "yellow pages" for network products and solutions, LinkSmart lets you quickly find what you need in network-specific categories such as "LAN Test Equipment," "Security," "Network Storage" and more. **DocFinder: 5239**

### Getting NetSmart

Now through Aug. 31, save \$300 on all Global Knowledge online courses. **DocFinder: 5240**



### CARUSO'S CACHE

*The best of the NetFlash daily newsletter*

#### New Mexico settles with Microsoft

Could it be the first domino? New Mexico has settled its claims of illegal monopolistic behavior against Microsoft, a day after the company changed part of its licensing policy for OEMs. One down; 18 other states' attorneys general and the federal government to go. **DocFinder: 5244**

#### IBM develops wireless LAN security analyzer

If you're nervous about putting your corporate data over the airwaves, you're not alone. IBM built a testing device to probe weaknesses in wireless LANs, helping network managers prevent "drive-by hacking." **DocFinder: 5245**

#### Wireless LAN bridge and NICs on tap from Netgear

Speaking of wireless LANs, hardware maker Netgear just announced wireless network interface cards and a bridge for connecting wireless Ethernet to a wired Ethernet network. The company even bundles it all into a "starter kit." **DocFinder: 5246**

#### Tuvalu celebrates domain name deal on stamps

I love the story of how this small island nation hit it big by licensing its country code. By a twist of fate, the poor country of Tuvalu was assigned an Internet top-level domain suffix of ".tv" — which promises to be in high demand in coming years. Now the country is commemorating its newfound wealth in stamps. Next step: Get all 10,000 people in the country e-mail so they don't need stamps. **DocFinder: 5247**

#### Cisco to buy metro network company AuroraNetics

Usually acquisition-hungry, Cisco has had to be very choosy lately, so you know AuroraNetics must really be onto something. The company makes silicon for metropolitan-area networks and the emerging technology Resilient Packet Ring. **DocFinder: 5248**

— Jeff Caruso, managing editor, online news

Sign up for this e-mail newsletter online. **DocFinder: 3850**

## COLUMNISTS

### Compendium

First the book club, now the Internet Fusion Executive Editor Adam Gaffin links to a story on CNN: Who should oversee the Internet? How about Oprah? **DocFinder: 5241**



### Help Desk

*Back to factory default*

Ron Nutter helps a user reset a Cisco 2501 router. **DocFinder: 5242**

### Home Base

*Telework teambuilding*

NetWorker columnist Jeff Zbar asks: How do you keep the "we" in the team? **DocFinder: 5243**

# What is DocFinder?

We've made it easy to access articles and resources online. Simply enter the four-digit DocFinder number in the search box on the home page, and you'll jump directly to the requested information.

## NEWS BRIEFS, JULY 16, 2001

## Wireless LAN sales are up

The wireless LAN market had a strong first quarter this year, reports Dell'Oro Group, as sales of 802.11b gear increased 15% to \$234.1 million. The research firm says the top vendors of WLAN equipment were Agere Systems, a Lucent spinoff; Cisco; and Buffalo Technologies, which concentrates on the home- and small-office markets. Dell'Oro predicts the market for WLAN equipment will more than double this year, taking in an estimated \$1.1 billion worldwide.

## Google expected to tap Schmidt

Eric Schmidt, former CEO of Novell, is expected to take over the top spot at Google as early as this week, according to a Novell source. He will remain chairman of the board of Novell. Schmidt previously took a position on Google's board as chairman. Asked about the report via an e-mail from *Network World*, Schmidt replied, "Google has not made any such announcements." Feel free to read between the lines.



**Schmidt: Set to become Google CEO.**

## Microsoft offers concession

Under the shadow of the recent U.S. Court of Appeals ruling, Microsoft said last week it would give computer makers more freedom to remove Internet Explorer and add icons to the desktop in the Windows operating system. The privileges will go into effect with Windows XP, which ships Oct. 25. "We recognize that some provisions in our existing Windows licenses have been ruled improper by the court," CEO Steve Ballmer said. He added that the move was not a substitute for settlement talks in the antitrust case. Some observers say the concession was too little, too late, but others see it as a small and positive step.

## Cisco reopens the purse strings

Cisco last week announced its first acquisition of the year, picking up metropolitan network technology company AuroraNetics for \$150 million in stock. Founded last year, AuroraNetics develops 10G bit/sec silicon technology for metropolitan-area networks, specifically for Resilient Packet Rings. The AuroraNetics acquisition will let Cisco scale its technology from the current 2.5G up to 10G bit/sec, Cisco says. Cisco bought 23 companies last year.

## Baltimore Technologies CEO quits

Fran Rooney, Baltimore Technologies CEO, resigned last week following the company's announcement of restructuring plans and "significant" staff cuts, which will be detailed next month. The Dublin, Ireland, maker of public-key infrastructure software employs about 1,150 people. It laid off 250 employees in May. Baltimore expects revenue of \$22 million for the second quarter, representing a 10.6% decline from the same period a year ago. CFO Paul Sanders will serve as acting CEO until a replacement for Rooney is found.

## Vendors launch 'telematics' venture

Oracle has partnered with a wireless joint venture company backed by Ford and Qualcomm to develop wireless computer services for vehicles. Oracle says it teamed with the Wingcast joint venture to form a development center in San Diego for designing telematics systems. Telematics integrates computing and wireless telecommunications technology with motor vehicles. New service offerings for mobile commerce, entertainment and communications will use the wireless version of Oracle's 9i Application Server and its 9i database, the companies say. "Virtually every application that Oracle makes will be voice-enabled and accessible in your vehicle," Oracle CEO Larry Ellison says.

## OED gives official OK to SMS

Mobile phone users have made their mark on the latest edition of the venerable Oxford English Dictionary. The term SMS — Short Message Service — and a glossary full of abbreviations employed by SMS users have made their way into the revised edition of the Concise Oxford Dictionary released last week, along with a number of other high-tech terms. The OED editors felt that the influence of SMS text messaging made it worthy of treating it as an integral part of the English language, says Judy Pearsall, publishing manager for the OED, published by Oxford University Press. SMS usage is frequent enough for the OED to have also included a glossary of terms commonly used in SMS text messages, Pearsall says. Along with expressions as GR8 (great), BBLR (be back later) and HAND (have a nice day), emoticons — such as the popular smiley face :) — have made it into the dictionary.



Users can now purchase any or all of the six components of Unicenter, pieces that manage networks and systems, administration and operations, IT performance, databases, Web infrastructure or applications. The core is still a framework, but users need fewer pieces to garner the benefits.

Unbundling the software also makes CA's price more appealing to smaller companies, says Dennis Drogseth, an analyst with Enterprise Management Associates. Whereas CA's

# Users keen on the latest version of CA's Unicenter

BY DENISE DUBIE

ORLANDO — Beta-version users are applauding the latest release of Computer Associates' management framework software, saying the more modular design makes it easier to implement and use.

CA last week introduced Unicenter 3.0, formerly called Unicenter TNG/TND, to approximately 10,000 attendees at its CA World users conference in Orlando. CA says it rebuilt the Unicenter architecture so customers could pick and choose from the different network and systems management components, rather than implement the whole package.

"CA is definitely slimming down its offerings," says Jasmine Noel, an analyst with Hurwitz Group. She says CA tried "to do everything at once" with former versions but now has listened to users who report "they need to get certain pieces up and running in a reasonable time frame" and users who don't want all their network software coming from one company.

Sallie Mae's Jeffrey Rhoads says his priority at the financial services company is keeping the customer help desk running efficiently. His tests with Version 3.0 show that it shares trouble-ticket data with just the automated help desk software. In the past, he was not able to share data without "opening up all the data in Unicenter to everyone," says Rhoads, who is manager of technology projects and planning at the company.

But the new features have only just been tested, and Hurwitz analyst Rich Ptak points out that CA competitors Tivoli Systems and Hewlett-Packard have made similar promises of modularity, while BMC recently promised root-cause analysis in its Patrol products.

"These companies will have to differentiate themselves in the execution, and that'll be at least another six months before we know who does what they say they will do," Ptak says.

framework pricing had users committing millions of dollars to software, pricing for the company's new suite offerings can start as low as \$20,000 to \$50,000, he says.

Among new features in Unicenter 3.0 are customizable management portals, root-cause analysis and cluster management.

**caworld**<sup>sm</sup>

Don Meynig, director of information management for the U.S. Army Materiel Command, says the new management portals help him show his managers how the software is making "more from less" for the federal government.

"[Unicenter] is helping us reduce our support staff and still maintain our customer needs," he says. Meynig created portals for his superiors to view information about how the network is affecting other aspects of the government agency.

Sorrel Jakins, associate director of infrastructure engineering at Brigham Young University in Provo, Utah, says his tests of Unicenter 3.0 show the new version makes it simpler for student employees without much expertise to spot problems. He points to the new visualization feature, which performs root-cause analysis, removing duplicate alarms and isolating the source of network problems on a screen for network managers.

Computer Associates: [www.ca.com](http://www.ca.com)

**THIS IS AN ARMOR-PLATED BULLET TRAIN  
BARRELING DOWN THE FATTEST OPTICAL IP PIPE ON THE PLANET.  
THIS IS BROADBAND ACCESS, FIREWALL SECURITY AND A SCREAMING INTERNET CONNECTION.  
DEPLOYED LIKE SPECIAL OPS. THIS IS MOVING YOUR COMPANY BEYOND TRANSPORT.  
THIS IS THE QWEST VIRTUAL PRIVATE NETWORK. THIS IS RIDING THE LIGHT.**



1-800-RIDE-QWEST  
[qwest.com](http://qwest.com) / 1-800-743-3793 ext. 1118

ride the light  
**Qwest**

Qwest provides Network VPN connectivity in the United States and select countries around the world. In the states of AZ, CO, IA, ID, MN, MT, ND, NE, NM, OR, SD, UT, WA and WY, Qwest provides Internet services in conjunction with a separate Global Service Provider (GSP) that provides customer connectivity to the global Internet. Minimum one-year term of commitment. Local loop service, additional customer equipment, and installation required. Nortel Networks™, the Nortel Networks logo and the Globemark are trademarks of Nortel Networks. © 2001 Qwest Communications International Inc.

# What an AT&T Broadband sale means to you

BY DENISE PAPPALARDO

Comcast threw a wrench into AT&T's restructuring plans last week when it offered to buy the company's cable network unit, AT&T Broadband. As AT&T considers the bid, customers may be wondering how such a deal would impact them. We've laid out a few questions and answers regarding the possible deal.

## Why would AT&T consider the sale of its cable unit?

The company's debt is in the \$45 billion range. One consideration is that if CEO C. Michael Armstrong had never bought the cable companies that make up AT&T Broadband, AT&T would not have that kind of debt — or unhappy shareholders — today. Comcast's bid includes \$44.5 billion in stock

and the assumption of \$13.5 billion of debt. Also, while AT&T has the ultimate say on whether to sell AT&T Broadband today, this will not be the case for long. Now a wholly owned subsidiary, plans call for AT&T Broadband to become a separate company. So, if AT&T doesn't sell it now, it may be bought up later anyway.

## Is there a chance that AT&T will change its mind about spinning off AT&T Broadband?

Analysts say yes. There is a chance that Armstrong will go back on his grand plan to split AT&T into four groups. Comcast's move to acquire the division when it's still a part of AT&T shows that AT&T Broadband is a desired asset. If AT&T does not agree to the current Comcast deal, Comcast or another company may just wait for

AT&T to spin it off. Comcast will then be dealing with a different CEO and a different set of stockholders. The result: Any plans that AT&T proper has to team up with AT&T Broadband may be lost if a new parent enters the scene.

## Doesn't AT&T need AT&T Broadband to fulfill its local service strategy?

That was the plan, but last October when Armstrong announced AT&T's restructuring, he pretty much put the last nail in that coffin. When AT&T acquired TeleCommunications in 1998, it said local cable television networks around the country would provide the company direct access to millions of homes. This direct access would let AT&T bypass incumbent local exchange carriers. The company has 22 million cable customers. But while it has rolled out voice

## The bid

**Comcast faxed AT&T's CEO, C. Michael Armstrong, a proposal last week to buy AT&T Broadband. Here are some of the facts:**

- Comcast wants to buy AT&T Broadband for \$44.5 billion in stock.
- Comcast would agree to assume \$13.5 billion of the unit's debt.
- AT&T says it was not looking for a buyer, but is giving the Comcast proposal serious consideration.
- Armstrong says plans remain in place to create a separate company out of AT&T Broadband.

for remote office users, these are not widely used. The company is also testing IP VPN over cable in two markets, but is not offering it as a generally available service.

## What will happen to AT&T Broadband business customers if Comcast buys this unit?

It's not clear if AT&T would try to retain its business customers and perhaps buy transit access on the Broadband network to support these customers, or if all AT&T Broadband customers would be part of a Comcast acquisition. What is clear Comcast has not developed business services as quickly as AT&T Broadband.

The company last year announced @Home Pro, a cable modem Internet access service for business users. The service is the same as the @Home consumer offering, but costs more. □

# NFR Security unleashes high-speed intrusion-detection appliance

BY ELLEN MESSMER

ROCKVILLE, MD. — NFR Security has unveiled a 100M bit/sec intrusion-detection appliance that can watch corporate networks for hacker incursions and Trojan horses. The appliances give fresh competition to the two other vendors with high-speed intrusion-detection software products, Internet Security Systems and Intrusion.com.

The NFR Network Intrusion Detection-200 appliance runs a protocol analysis of applications traversing internal LAN links at points behind the firewall to look for suspicious events. The appliance reports back to a Windows-based monitor that provides alerts about suspected problems and offers resolutions.

In response to criticism that its earlier product, the software-based NID-100 for T-3 speeds, was too difficult to install and use, NFR developed the NID-200, which costs \$12,500, as a preconfigured hardware/soft-



**"People got the impression our first [intrusion-detection] software was hard to use, so we've changed it to make it easier,"** says Marcus Ranum, CTO, NFR Security

ware appliance.

"People got the impression our first [intrusion-detection] software was hard to use, so we've changed it to make it easier," says Marcus Ranum, CTO of NFR. Founded by Ranum four years ago, NFR has 100 employees with offices in the U.S., Europe and Asia. Last week Ranum told *Network World* he intends to expand NFR's product portfolio even further.

Next month the firm will release what Ranum calls a "host exposure analysis product" for Linux and Windows servers and desktop machines. This host-

based IDS, not yet priced, will detect security holes and guard application resources from unauthorized use.

It will compete against similar types of IDS products from Symantec, ISS, Computer Associates and Tripwire, among others.

Ken Newman, security and information risk manager for Deutsche Bank, says his engineering staff found the earlier NFR IDS too difficult to install, but he's willing to give NFR a second look because the latest product is a preconfigured appliance.

NFR Security: [www.nfr.com](http://www.nfr.com)

## TRIPWIRE SET TO MONITOR ROUTERS

File integrity vendor Tripwire this week is expected to announce Solaris-based software that scans Cisco router logs and checks for unauthorized file configuration changes and restores them on routers, if necessary.

Tripwire for Routers will ship late next month at a cost of \$7,400 for five routers. The product includes Windows-based monitoring console software that uses IP Security certificates or encrypted passwords to securely manage engineer access to routers.

Deutsche Bank, which had a hand in advising Tripwire on the software's development, says there's a strong need for this type of software.

"I had problems with change management in a router environment," says Ken Newman, security and information risk manager for Deutsche Bank, a global bank with a large Cisco router-based network. At Deutsche Bank, the security group approves router access control lists before the network operations group implements changes, but Newman says changes too frequently have been made without approval.

Newman says he knows of no software on the market to provide this type of change-management control, so he is offering input to Tripwire on requirements.

— Ellen Messmer

# Make your momma proud.

Whether you are an IT director for a huge corporation with a new E-business initiative or a SysAdmin for a scrappy startup company, people are looking to you to build a highly available, reliable and secure site, from the wiring closet to the end-user. Platform knows how to maximize the performance and availability of resources *beyond* the edge of the network. Our product suite, SiteAssure, is your web site's "safety net."

Take your average web site. Servers. Applications. Storage. Routers. Switches. Are they aware of each other and working together? With SiteAssure, they are. SiteAssure gathers granular health information from the applications and servers, even the services themselves, and feeds that back to the network gear. More information to the network gear means smarter decisions can be made about the traffic, resulting in a greater end-user experience.

SiteAssure then takes site management a step further. If the health of any one of the site resources is failing, SiteAssure takes action...for example, rerouting traffic, rebooting the server, restarting the application or alerting the administrator. Maximizing content delivery and minimizing down-time. Don't believe it?

Visit [www.siteassure.com](http://www.siteassure.com) and get an evaluation copy of our software. No new scripting language to learn. No long deployment cycles. No late-night calls about crashed sites.

## SiteAssure. It's how smart sites work.

Has Johnny looked into SiteAssure? My son, Bobby, deployed it on his servers so he doesn't have to constantly watch over his systems or bother with yucky administrative duties. In fact, he has SiteAssure automatically taking care of site failures, sometimes even before they happen! My son Bobby...he's so smart.

My son's site is going down all the time. He spends all day restarting machines and dealing with angry customers. Poor Johnny.

PLATFORM™  
**SITEASSURE™**  
Maximizing Site Performance and Availability



+1.888.514.3333 (North America only)  
[www.siteassure.com](http://www.siteassure.com)  
[info@siteassure.com](mailto:info@siteassure.com)



# Cabletron to go out with a whimper

*It is expected to be business as usual for Enterasys and other subsidiaries after Cabletron closes shop.*

BY PHIL HOCHMUTH

While Cabletron announced last week that it will cease to exist later this summer, financial and market analysts say little will change for Cabletron's subsidiaries and their customers as the parent company completes the final step in its transformation strategy.

Cabletron said that on Aug. 6, it would spin off Enterasys Networks directly to Cabletron shareholders. Each share of Cabletron stock will equal one Enterasys share, and the new company will trade on the New York Stock Exchange as ETS. Shareholders will then receive Cabletron's remaining holdings of Riverstone Networks stock on a ratio of .51-to-1.

Network management software maker Aprisma will temporarily become a wholly owned subsidiary of Enterasys. Cabletron officials say Aprisma will eventually be spun off as

its own public company before Dec. 31, either through an IPO or, more likely, by direct spinoff to Cabletron shareholders.

Global Network Technology Services, the consulting arm of Cabletron, will either be sold off or otherwise "disposed of" by this week, says Piyush Patel, Cabletron CEO. Since its establishment, the consulting arm's losses have grown from \$4.9 million in the first quarter a year ago to \$7.1 million last quarter.

After Aug. 6, Cabletron will cease to operate, and its stock will no longer be traded. Patel says he and other members of Cabletron senior management will continue to work with the independent companies as advisers. Patel did not say what his official title would be.

While under Cabletron's wing, Enterasys has fared particularly well. Since Cabletron created the company in February 2000, Enterasys has estab-



**CEO Piyush Patel** plans to stay around as an adviser to Cabletron's spinoff.

lished itself as a player in the enterprise network market. Last year, the company was second only to Cisco in Layer 3 Ethernet and Gigabit Ethernet switch port shipments, according to market research firm IDC. As a public company, CEO Henry Fiallo says Enterasys will have more autonomy to operate and make acquisitions.

With the spinoff completed, not much will change operationally for Enterasys and the other companies, analysts say.

"Since the formation of Enterasys as a company, [its] sales and management teams were able to reap the benefits of being an enterprise-only focused company, and they'll just continue to do that," as an independent company, says Cabletron watcher Michael Neiberg, a managing director at J.P. Morgan Chase.

Enterasys may look for new ways to improve its product lineup to stay competitive, says Joel Conover, senior analyst with Current Analysis.

"Given that we haven't seen an immense amount of [research and development] in certain market segments, like firewalls, we might see some acquisitions or partnerships to help them round out their product portfolio to better compete with Nortel, Cisco and 3Com," he says. □

# Jamcracker beefs up application integration platform

BY JENNIFER MEARS

**CUPERTINO, CALIF.** — With enterprise customers putting more applications on the Web, vendors are scrambling to provide the infrastructure that will integrate the different packages and let them work together more efficiently. That's what Jamcracker has in mind with the latest version of its hosted application delivery platform.

Later this month, Jamcracker, an application service provider (ASP) aggregator, will announce partnerships with enterprise portal software vendor Epicentric and application integration server provider Vitria to enhance the capabilities of its IT Management Platform, an XML-based infrastructure that Jamcracker uses to deliver multiple applications. The enhancements will let users personalize the portal view of their applications, and let Jamcracker provide real-time integration between ASPs, and between ASPs and legacy systems.

"IT is under intense cost pressure to figure out how to build a next-generation platform to really utilize the Web inside their business," says Todd Johnson, vice president of worldwide marketing for Jamcracker. "Our business has really been about building this platform that brings together all of these tools (directory management, security, provisioning and the like) and delivering it as a managed service and open framework."

Jamcracker doesn't host applications. Instead, it acts as the conduit to deliver managed services from Web-based software providers and other ASPs. In addition to providing managed applications, Jamcracker also offers customers help-desk support, 24-7 monitoring and billing services, all through a single portal. However, Jamcracker hasn't been able to use its platform to truly integrate the applications it manages — until now, Johnson says.

Jamcracker used to offer some integration capabilities by

running batch jobs between applications. For example, a user who wants data from a Jamcracker-delivered human resources application integrated with an in-house Oracle financial system could have Jamcracker run batch jobs nightly.

"But large enterprises want to use the flow of information from one application to another to replicate a business process," Johnson says. "And that's not a batch job; that's a real-time transaction-oriented process."

To provide that real-time integration, Jamcracker is incorporating Vitria's application integration technology, called BusinessWare, into its platform.

Jamcracker will still offer its standard platform and portal. However, users can get the advanced integration and personalization capabilities by paying about 20% to 30% more per application, Johnson says. The platform will be available for purchase July 23, but implementations will begin in the fall.

Tony LaRosa, vice president

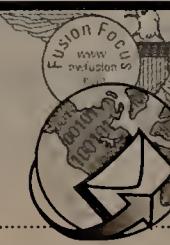
of enterprise IT at Kinetics in Santa Clara, a critical process infrastructure provider, looked at outsourcers such as IBM and Electronic Data System before signing a two-year contract with Jamcracker. He decided to go with Jamcracker because of the enhancements to its IT Management Platform, which will allow him to integrate his legacy applications with hosted services.

"I've been meeting with Jamcracker for over a year now and one of the requirements to move forward was this capability," he says. "We didn't want to lose our [IT infrastructure] investment here. We thought of Jamcracker as augmenting our IT, not replacing it."

Jamcracker: [www.jamcracker.com](http://www.jamcracker.com)

## ASPs

Subscribe to our free newsletter.  
DocFinder: 5434



# NetworkWorld

Editorial Director: John Gallant

Editor in Chief: John Dix

## NEWS

Executive Editor, News: Bob Brown  
Associate News Editor: Michael Cooney  
Associate News Editor: Paul McNamara

## INFRASTRUCTURE

Senior Editor: John Fontana, (303) 377-9057; Fax: (303) 377-9059  
Senior Editor: John Cox, (978) 834-0554; Fax: (978) 834-0558  
Senior Editor: Deni Connor, (512) 345-3850; Fax: (512) 345-3860  
Senior Writer: April Jacobs, (603) 742-1789  
Staff Writer: Phil Hochmuth

## NET.WORKER

Managing Editor: Toni Kistner, (201) 587-0124  
CARRIERS & ISP

Senior Editor: Tim Greene  
Senior Editor: Denise Pappalardo, (202) 737-7614; Fax: (202) 393-4291  
Senior Writer: Michael Martin, (201) 556-1280

## THE EDGE

Managing Editor: Jim Duffy  
Staff Writer: Terri Gimpelson, (603) 934-6002

## ENTERPRISE APPLICATIONS

Senior Editor: Ellen Messmer, (202) 737-6046; Fax: (202) 393-4291  
Senior Editor: Carolyn Duffy Marsen, (703) 917-8621; Fax: (703) 917-8622  
Senior Writer: Jennifer Mears, (608) 275-6807; Fax: (608) 275-6814  
Senior Writer: Kathleen Dohson  
Senior Writer: Ann Sullivan  
Staff Writer: Denise Dubie

## COPY DESK/LAYOUT

Assistant Managing Editor: Ryan Francis  
Senior Copy Editor: Ian Lamont  
Copy Editors: Brett Cough, Greg Cusack, John Dooley, Monica Hamilton

## ART

Design Director: Rob Stave  
Art Director: Tom Norton  
Senior Designer: Michelle Barbera  
Senior Designer: Stephen Sauer  
Graphic Designer: Lisa Hovsepian  
Art Assistant: Amanda McCormick  
Infographics Researcher: Jacy Edelman

## FEATURES

Features Editor: Neal Weinberg  
Managing Editor, Features: Amy Schurr  
Features Writer: Sharon Gaudin  
Opinions Page Editor: Susan Collins  
Features Writer: Suzanne Gaspar

## REVIEWS

Test Alliance Director: Christine Burns, (717) 243-3686  
Senior Reviews Editor: Keith Shaw, (508) 490-6527  
Reviews Editor: Mike Avery  
Test Alliance Partners: Mark Gibbs, Gibbs & Co.; Joel Snyder, Opus One; Dennis Williams, ProductReviews.com; John Bass, Centennial Networking Labs; Bob Currier, Duke University; Terri Bracco, Current Analysis; Barry Nance, independent consultant; Thomas Powell, PINT; Edwin Mier, Mercom; Thomas Henderson, ExtremeLabs; NTS/XCAL; Travis Berkley, University of Kansas; David Newman, Network Test; Christine Perey, Perey Research & Consulting  
Contributing Editors: Daniel Briere, Mark Gibbs, James Kobielski, Mark Miller

## NETWORK WORLD FUSION

Executive Editor, Online: Adam Gaffin  
Managing Editor, Online: Melissa Shaw  
Events Editor: Sandra Gittlen  
Managing Editor, Online News: Jeff Caruso, (650) 577-2714; Fax: (650) 358-4518  
Associate Online News Editor: Joanne Cummings, (978) 688-0109  
Multimedia Editor: Jason Reserve  
Online Copy Chief: Sheryl Hodge  
Online Copy Editor: Carri Hausar  
Senior Web Producer: Marlo Matoske  
Web Producers: Chris Cormier, Kris Guay, Katie Ward

Online Assistant Art Director: Meghna Bheda  
Online Graphic Designer: Zech Sullivan  
Online Researcher: Elaine Velovic

## SIGNATURE SERIES

Editor: Beth Schultz, (773) 283-0213; Fax: (773) 283-0214  
Executive Editor: Julie Bort, (970) 468-2864; Fax: (970) 468-2348  
Copy Editor: Brett Cough  
Editorial Operations Manager: Cheryl Crivallo  
Office Manager, Editorial: Gianna Fasold  
Editorial Office Administrator: Pat Josek  
Research Assistant: Deidre Messenberg  
Main phone: (508) 460-3333  
E-mail: first name\_last name@nwfusion.com

# SUPER DLTtape™ IS HERE.

(CAPE NOT INCLUDED.)



## EXTENDING THE STANDARD.

There's a powerful new hero in tape backup systems, Super DLTtape. The pinnacle of 15 years of advancements in archive and recovery engineering. It features a blistering transfer rate of over 22 MB per second and an amazing capacity of up to 220 GB. And the Super DLTtape system is backward-read compatible, so you won't leave past data on DLTtape™ IV media behind. It's not surprising why this is the tape backup solution trusted 5:1 by IS/IT managers. To learn more about this extraordinary new force in tape storage, go to [www.NWD.superdlttechnology.com](http://www.NWD.superdlttechnology.com).



**Sun,**  
continued from page 1

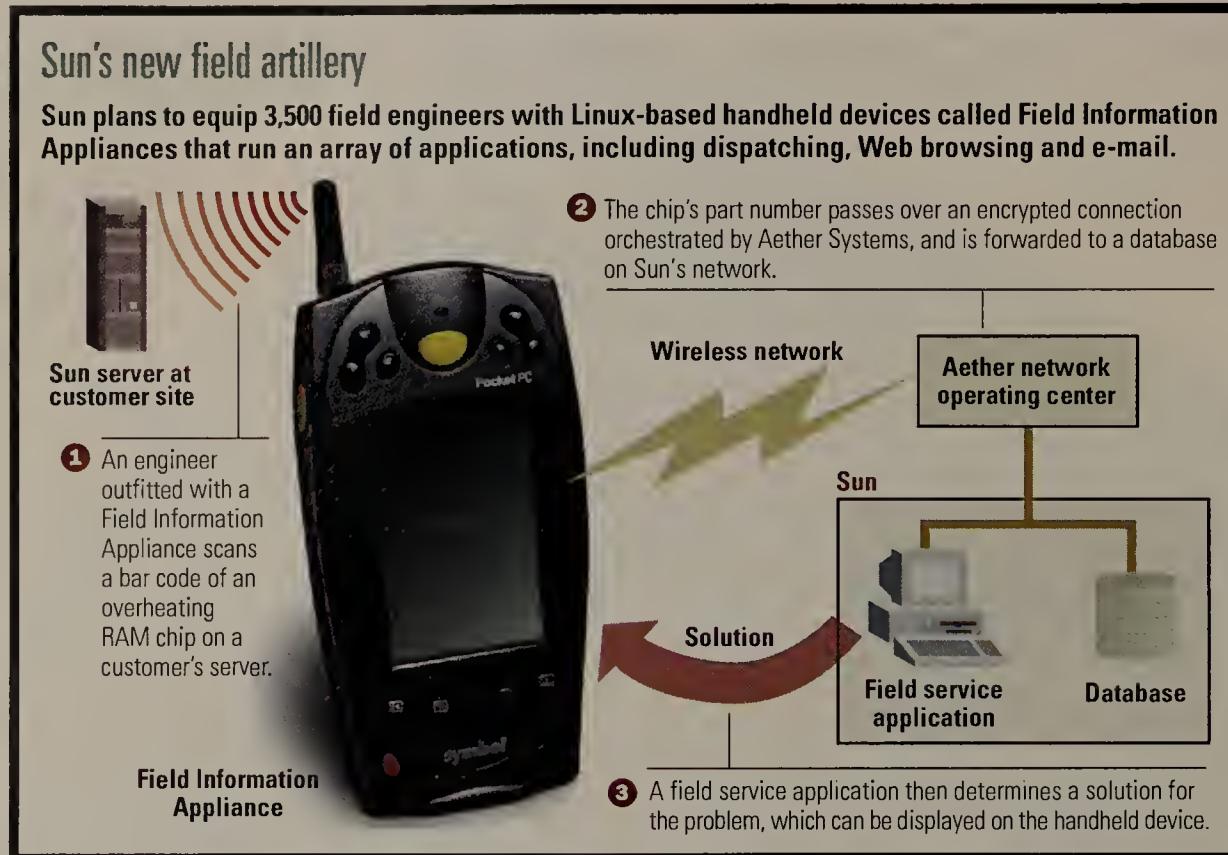
of Sun's global operations unit, who says his main concern was that Sun field engineers embraced the handheld systems. "The last thing I wanted to do was to be a pioneer," he says.

The new device needed a reliable, full-blown operating system to cache lots of data locally and run big applications at the same time, along with a Java Virtual Machine (JVM), a Web browser and personal information management applications. But, equally important, the final combination of hardware and software had to be such that the 3,500 field engineers could put it to work quickly and easily.

In the end, Sun worked closely with a team of vendors to create a rugged, PDA-sized handheld, packed with memory, running a compact version of Linux and a suite of applications ported to it. The initial test group of 50 engineers has taken readily to the handheld, called the Field Information Appliance.

Richards expects the project, which he says has a price tag of less than \$10 million, to pay for itself in about six months.

Engineers with Red Hat did most of the work tailoring the Linux kernel for the handheld, while Sun's engineers fine-tuned a JVM for Linux. Symbol Technologies adapted one of its existing wireless handhelds, which usually runs Palm OS or Microsoft PocketPC software, for Sun. The device incorporates a bar code scanner and a wireless modem. Aether Systems



coordinated the wireless carrier contracts and forged a message-based middleware link with Sun's corporate servers. And Interlink wrote a Java field service application for the device.

The new Linux appliance is expected to let engineers visit more jobs, record customer information more accurately and continuously update Sun's database for identifying and fixing support problems. Until now, engineers hopped around two-way pagers to get alerts on their assignments and basic customer contact information, cell phones to keep in touch with supervisors, laptops to run access and download troubleshooting data, and paper forms that had to be filled out and filed for each job.

Initially, the Linux device in

many cases will be one more piece of equipment to carry around, although Richards expects it to quickly replace several, and maybe even all, other devices.

About a year ago, Richards' group began examining Sun's paper-based system used to manage the information flow for equipment failures, replacement parts and service calls. "I wanted to be able to ask any question of any field engineer anywhere," Richards says. Another concern was getting more current updates on the status of engineers' job assignments to schedule them more efficiently. In the past, this information was usually at least two hours old.

With the new handheld, solutions to problems get to the

database faster, and can be distributed to the field engineers more speedily. For example, Sun previously had discovered that memory chips in its servers were overheating because the airflow in the servers was blocked when they were packed in with other server brands. The new application will be able to key a set of information to the particular job that an engineer is working on. So for a given memory chip replacement job, the database will download a form to the handheld that alerts the engineer to check the server's airflow.

Richards says his team looked at nearly 50 devices, everything from laptops to cell phones with browsers based on the Wireless Application Protocol. They finally decided to go with a PDA-sized device, compact and almost instantly usable when switched on. It had to have enough processing power and memory to run applications and store fairly large files. A wireless modem would let it periodically synchronize with corporate servers.

Windows CE was ruled out fairly early, partly, Richards acknowledges, for ideological reasons at a company where Unix rules. But Sun also went with the Linux device because of the results of a prototype test.

"The very first time we ran Java on Windows CE, the boot time was 10 minutes," he says. "With our current device, it's 7 seconds. WinCE takes a lot of memory, CPU cycles and other resources."

Other handhelds were dis-

counted because of a lack of expandability, short battery life, or bad ergonomic design.

Despite his own bias in favor of Palm OS, Richards concluded the software had various internal memory limits that made it unsuitable for Sun's needs. In the end, Symbol agreed to work with Red Hat to build a custom device, based on the Symbol 2700 handheld, that could run Linux. The device has a 60-MHz MIPS processor, 16M bytes of RAM, 12M bytes of flash RAM, Symbol's custom snap-on keyboard, built-in bar code scanner, a serial port with cable to connect to a Sun server as a diagnostic console, and Red Hat Linux 7.0.

The device eventually will be upgraded to use an Intel StrongARM microprocessor and carry 32M bytes of RAM.

Besides choosing Linux, the other major decision was implementing wireless access for the engineers. "I thought, 'My God, I'm going to get bills from 50 wireless carriers all over the world, and I'll have to support these devices,'" Richards recalls.

He turned those headaches over to Aether, which negotiates the deals with the carriers, making use of widely available Cellular Digital Packet Data nets in North America, and GSM nets, or whatever is available, overseas. Data calls from the engineers route through the carrier nets to Aether's network operations center, and from there, via a secure link to Sun's corporate network. The handheld runs the client program for Aether's message-oriented middleware, which encrypts the entire transmission from handhelds to a corporate proxy server.

Sun's experience shows that Linux can be a key part of extending critical enterprise applications to mobile computing devices. But it also shows that doing so requires extensive, and expensive, custom programming, and a closely supervised relationship among a group of hardware and software vendors, as Richards himself alludes to with an ironic comment.

"Aside from the fact this was custom development, with a brand-new version of Java and Linux, and brand-new applications, it wasn't that hard," he says. □

Get more information online.  
DocFinder: 5250  
[www.nwfusion.com](http://www.nwfusion.com)

## A REPORT FROM THE FIELD

**T**he early word from Sun's field engineers is that the Linux-based handheld devices it has started rolling out are pretty handy. "I'm pleased with it," says Freddy Mock, a Sun field engineer in Denver, and one of the first beta users of Sun's Field Service Appliance. Some of the beta users, ex-IBMer, are calling it the Brick, after an old IBM portable device.

"I like the flow of it. We get all the information for [the job assignment], and we can update the call as we progress," Mock says. "And the supervisor has up-to-the-minute information on the call right on his desktop computer."

He carries it in a belt pouch and keys in his user ID and password to use the applications. The 19.2K bit/sec speed of the CDPD cellular

net is much slower than a 10M bit/sec LAN, but adequate, according to Mock. The on-screen graphical user interface uses a flock of abbreviations and "you have to remember them," he says.

Mock says he can now quickly add notes on a repair job via the handheld's on-screen or plug-in keyboards, and this information is uploaded to the field engineering databases when he reconnects to the network.

"If the customer site crashes again, then the engineers online can see, 'Well, Freddy did this thing, we can therefore check this other thing,'" he says. "In the past, I'd carry that data around for maybe two days. They'd have to call me or page me, and ask me what I'd done."

—John Cox



**TWO IS BETTER THAN ONE.**

**GADZOOX DELIVERS THE POWER OF TWO.**

**A 2Gb Open Fabric Fibre Channel Switch  
For The Price Of 1Gb**



**Finally, a fabric switch that plays well with everyone.**

Looking for the best value in next generation fabric switches? Feast your eyes on Gadzoox Networks' Slingshot. An open fabric switch for companies that not only have a healthy appetite for storage, but appreciate a great value when they see one. We're talking double the performance with a cool 2Gb throughput with full-duplex support, all for less than a 1Gb switch today. Industry leading FC-SW2 open standards, legacy Brocade connectivity, auto-sensing for loop or fabric and auto-negotiation for 2Gb or 1Gb ports ensure backward and forward compatibility for existing full fabric and loop devices. And as you might expect, Slingshot seamlessly integrates into backup solutions from all leading vendors. Gadzoox Networks' Slingshot — the one SAN solution that has everything else in the category licked.

**Want to learn more? Visit our website at [www.gadzoox.com/slingshot](http://www.gadzoox.com/slingshot) or call a Gadzoox Sales Rep at 1-888-391-7360 today.**



## Out Of Thin Air

When the world's greatest golfers tee off July 19 at the British Open at Royal Lytham & St. Anne's course, a unique piece of technology will help television producers replicate for viewers a crucial but invisible major factor—the wind.

"With the Unisys wind stick and associated technology, the television audience can more closely experience what the golfers feel, particularly at Britain's breezier courses," notes David Fox, Director of Sports Marketing at Unisys.

Unisys, which has provided scoring for The Open for 22 consecutive years, developed the wind stick technology in response to a challenge from ABC Sports, which wanted to enhance standard television graphics showing things like distance to the hole and driving distance.

"The wind is critical to the player's focus," notes Jack Graham, Golf Producer at ABC. "With the wind stick, we can create graphics that show the wind speed and direction at the moment the golfer swings. We can show how it changes during the ball's flight and how it affects the shot. It's great stuff."

The wind stick is just one of the ways Unisys is helping bring the excitement, tension and utter precision of tournament golf action into living rooms around the world.

Unisys is proud to provide scoring and wind stick technology at the 130th British Open Golf Championship, July 19-22. [www.aheadforebusiness.com](http://www.aheadforebusiness.com)

www.aheadforebusiness.com

**UNISYS**  
We have a head for e-business.

Messaging,  
continued from page 1

Lotus, Microsoft and Novell offer browser access to their messaging and collaboration servers, but it's mostly limited to e-mail and calendar features. The rich interfaces and range of services are still tied to the native clients from all three vendors, which combined have nearly 185 million users.

Lotus and Microsoft tout their browser-based clients as complements to the native client—Notes and Outlook, respectively. Novell still favorably compares its GroupWise client to GroupWise Web Access, but the platform is less of a development environment than the others.

"The thin and fat options are necessary because they need to satisfy a broad user base," says Ron Shoultz, IT secretary for The Salvation Army and a user of Lotus Notes. But Shoultz has no plans to abandon the R5 Notes client for the new iNotes Web Access browser-based client that Lotus released last week. "We just completed our rollout and we are set," he says.

Plus, Shoultz says, the fat client guarantees that whatever Notes-based application he installs will work on the desktops of all his users.

The promise of the thin client was that IT would not have to deploy and manage an enormous roster of clients.

Or absorb the cost, which experts say can hit \$500,000 for a rollout of 15,000 fat clients, a price tag that would be sharply reduced in a thin-client scenario.

**Be a Net Know-It-All**

Answer this and nine additional questions online and you could win \$500! Visit [NetworkWorldFusion.com](http://NetworkWorldFusion.com) and enter 2349 in the Search box.

**This week's question:**

Which country, according to a new report from the Organisation for Economic Co-operation and Development, boasts the highest number of broadband (cable and DSL) connections per 100 inhabitants?

[www.nwfusion.com](http://www.nwfusion.com)

## Fat vs. thin

**Major enterprise messaging vendors are offering IT executives client deployment options, but the disparity between fat and thin clients can be wide.**

Vendor	Fat client	Thin client	Major differences
Lotus	Notes	iNotes Web Access	iNotes supports offline access to e-mail, calendars and applications only with the installation of additional code on the browser. No support for embedded messages, encryption, extended search.
Microsoft	Outlook	Outlook Web Access	No offline access or support for tasks, journal or timed delivery. No spell-check feature.
Novell	GroupWise	GroupWise Web Access	No offline access.

However, thin clients offer a fraction of the functionality for e-mail systems that are now a hub of sophisticated messaging and collaborative applications.

The native client is a necessity especially for users of Lotus Notes and Microsoft Exchange that develop applications on those platforms. Without it, offline features are lost and IT has to re-engineer existing applications for the Web to have any hope of getting some of it back. Novell does not offer offline access with its thin client.

On the flip side, deploying thin clients typically means not having to buy and maintain hardware for end users who just want to check mail while away from the office. They require less software to download. By comparison, a full Notes client installed over the network is an 80M-byte file while Internet Explorer 5.0 is 16.8M bytes for a standard install. And the thin client gives employees without dedicated machines—such as those on a shop floor—e-mail and calendar access through a kiosk or shared PC.

The limited-function thin client also translates well to the wireless plans of vendors.

Research bears out that thin-client migrations are likely to be selective.

The number of companies that used a browser as their primary messaging client was roughly 3% last year, according to a survey by Ferris Research. And that number will drop to 1% by the end of this year. The survey also showed that 5% of employees last year used a browser for occasional access, with that number expected to rise to 8% by year-end.

"The real growth will come from the 30% of corporate users today that have neither a desktop nor e-mail," says David Ferris, president of Ferris Research. "They will come on board just needing e-mail and they will likely get browser access."

Ferris says vendors and users would prefer a thin client over a fat one as soon as they are functionally equivalent, but that likely won't happen for another five years.

"We would have to redesign thousands of applications in order to use them with iNotes," says Steve Holman, assistant vice president of Internet architectures for Wachovia Bank of Winston-Salem, N.C.

However, Holman does anticipate finding uses for iNotes.

"Our main goal with the thin client is to give users access from home without a corporate laptop while using their own ISP. We didn't want to download software to a PC we didn't own because that meant we'd have to support it," he says.

Holman saves on average more than \$60,000 per month now that employees use their own ISP for connectivity instead of a company-funded 800 number.

However, he finds that among his installed base of 13,000 LAN users about 60% require the fat Notes client.

One reason for that is iNotes does not natively support offline access to applications, a major feature distinction for Lotus. Companies have to use the Domino Offline Services tool kit to DOLS-enable applications. But that means first having to Web enable legacy Notes applications before re-engineering them for DOLS and adding code to the browser.

Microsoft last fall promised offline access in Outlook and then scrapped the plan three months later. That meant the feature also would not be available for its Outlook Web Access client.

"Outlook Web Access is a companion, it's a true thin client, it's not the client we think people will live in," says Chris Baker, lead product manager for Exchange. □

## Correction

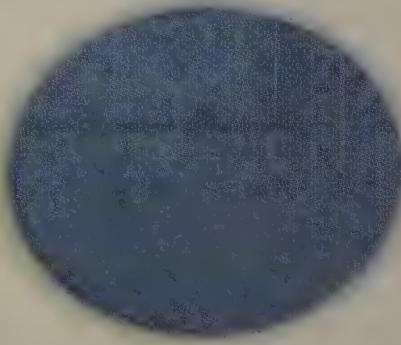
The story "Day One" at Novell (July 2, page 1) should have said that BorderManager Authentication Services has been replaced by BorderManager 3.6. Novell Distributed Print Services will be discontinued effective Sept. 1, 2001, as its functionality has been included in NetWare 5.1.

# In e-business everyone wants to unify higher enterprise performance with lower total cost. The ES7000 goes further.



The Unisys e-@ction Enterprise Server ES7000 is no ordinary server. It does the enterprise-level transactions a CIO dreams about. And at a total cost that lets a CFO sleep at night. Powered by our CMP architecture, the ES7000 harnesses 32 Intel® Pentium® III Xeon™ Processors. Delivering a level of performance from Microsoft® Windows® 2000 you'd normally only associate with UNIX. Combining scalability, availability, and flexibility with all-important affordability. That's enough to even unify the CFO and the CIO. Which until now, was an impossibility. To find out what the ES7000 can do for your e-business, visit [www.aheadforebusiness.com](http://www.aheadforebusiness.com).

**UNISYS**  
www.aheadforebusiness.com  
We have a head for e-business.



## SuperStack® 3 Switch 4400. Amazing features. Stunning performance. Surprising price.

The new SuperStack 3 Switch 4400 from 3Com® offers Layer 4 traffic prioritization, resilient stacking, Gigabit Ethernet uplinks, a lifetime warranty and free 3Com® Network Supervisor software.\* Naturally, you can also expect it to deliver 10/100 Mbps wirespeed performance. What's really surprising about the new SuperStack 3 Switch 4400 is that it gives you all this at an affordable price.

For more information about the SuperStack 3 Switch 4400 and trade-up opportunities, talk to your 3Com reseller today, visit [www.3com.com/wow4000](http://www.3com.com/wow4000), or call 1-888-906-3266, x474.

  
3COM

Simple sets you free.

\*Limited lifetime warranty. Warranty may be found in packaging and 3Com.com. Copyright ©2001 3Com Corporation. All rights reserved.  
3Com and SuperStack are registered trademarks and the 3Com logo is a trademark of 3Com Corporation.



# Infrastructure

**TCP/IP, LAN/WAN Switches, Routers, Hubs, Access Devices, Clients, Servers, Operating Systems, VPNs, Networked Storage**

## Briefs

Network tools vendor Finisar has announced it has added IP storage capability to its protocol analysis software. Finisar recently added iSCSI capability to its Shomiti Systems Surveyor 4.0 protocol monitoring and analysis software, which lets network managers monitor and troubleshoot their Gigabit Ethernet companies. iSCSI is the protocol that lets Fibre Channel storage data be transported natively over IP-based networks. Shomiti Surveyor 4.0 starts at \$1,500. The package will be available this month.

Finisar: [www.finisar.com](http://www.finisar.com)

Hewlett-Packard last week slashed prices on some of its rack-mounted NetServer systems by as much as 23%. The reduced prices are available on the company's LP 1000r and LP 2000r systems. HP is also going to provide some of its resellers with instant rebates of up to \$825 on some NetServer systems, including the E800, LC 2000, LP 1000r and LP 2000r systems and accessories. HP says that the net result for end users will be HP NetServer systems starting at about \$950. Users can get more information at [www.hp.com](http://www.hp.com), or buy from the HP Business Store at [www.buy.hp.com](http://www.buy.hp.com).

The PDA market is about to get more crowded, as NEC last week said it plans to follow in the path of Sony, which launched its first PDA last year, and Toshiba, which plans to launch its own device this year. The NEC device will be based on a StrongArm central processor from Intel and run Microsoft's Windows CE operating system. The company has yet to announce other details, but said it plans to support Compact Flash and Secure Digital media cards in the device.

NEC: [www.nec-global.com](http://www.nec-global.com)

## Novell unchains storage options

*NetDevice storage appliance handles NetWare, Windows, HTTP, Unix and Linux files.*

BY DENI CONNOR

**N**ovell is expected this week to announce one of the first directory-compatible network-attached storage systems that lets customers store and share all versions of their NetWare, as well as Windows, HTTP, Unix and Linux files in a single location.

The NetDevice NAS is a storage package built on a NetWare 5.1 kernel that supports storage capacities limited only by the hardware it is installed on. The NetDevice is a "soft" appliance, like the company's Volera Excalibur. Novell supplies the software, and customers install it on hardware contained on a recommended configuration list provided by Novell. Because the software is not tied to specific hardware, soft appliances have the advantage of being redeployed as another type of single-function appliance or server, as necessary.

The NetDevice software supports  
See **Novell**, page 22

### Storage the Novell way

**Novell's NetDevice lets users employ their directories to control storage resources.**

In this screen, the network manager can configure the system for data or administrative access. Users with administrative access can manage the device using HTTP, FTP or telnet.

Select the Protocols you want to use on each IP Address to administer this appliance and access data. To modify a protocol, click the protocol name. To add an IP Address, click IP Address.

IP Address: 111.111.111.111

HTTP:

FTP:

Telnet:

Administration Access

IP Address: 111.111.111.111

HTTP:

FTP:

Telnet:

Data Access

IP Address: 111.111.111.111

CIFS:

NFS:

HTTP:

NCP:

HTTPS:

FTP:

Workstation Access

The network manager can restrict administrative access by the IP address of a workstation.

Authentication Sources

## Roundtable takes a look at InfiniBand issues

*IDC projects switched-fabric bus technology to be in 80% of server shipments by 2004.*

BY APRIL JACOBS

**N**EW YORK — Vendors and industry observers last week had a chance to debate the prospects for InfiniBand technology, the future bus architecture that promises to alleviate many of the bottlenecks now clogging up servers, storage and other network devices.

The consensus of a roundtable sponsored by VIEO, a company that makes InfiniBand software management technology, was that users won't begin to see products before year-end, but that wait time may well be worth it, because InfiniBand could help them take advantage of higher-performance server, network and storage systems.

The bottom line is that InfiniBand's switched-fabric bus architecture will let users accommodate many types of traffic that will increasingly be crossing through their data centers, including streaming video, voice and audio files — all of



**InfiniBand will provide a uniform, high-speed way to link servers and storage, says Intel's Jim Pappas.**

which now present bandwidth problems.

The panel included James Mott, VIEO CTO; Chris Gahagan, vice president of Recovery and Storage at BMC Software;

Michael Krause, senior interconnect architect at Hewlett-Packard; Duncan McCallum, a partner at venture capital firm OneLiberty Ventures; Jim Pappas, director of initiative marketing at Intel; and Mitch Schults, vice president of business development at ExaNet, a storage company with InfiniBand-enabled products in the works.

Vernon Turner, an analyst with market research firm IDC, served as the panel's moderator and also gave a presentation on the potential for the InfiniBand market.

Turner said IDC predicts that by 2004, 80% of all server shipments will be InfiniBand-enabled. Other IDC research suggests the InfiniBand device market will reach about \$2 billion by 2004. That means that of the projected six million servers shipped in 2004, four million could be InfiniBand-enabled.

For customers, InfiniBand products  
See **InfiniBand**, page 22



Manage to grab a sandwich.

Manage network additions.

Manage extranet servers.

Manage installations.

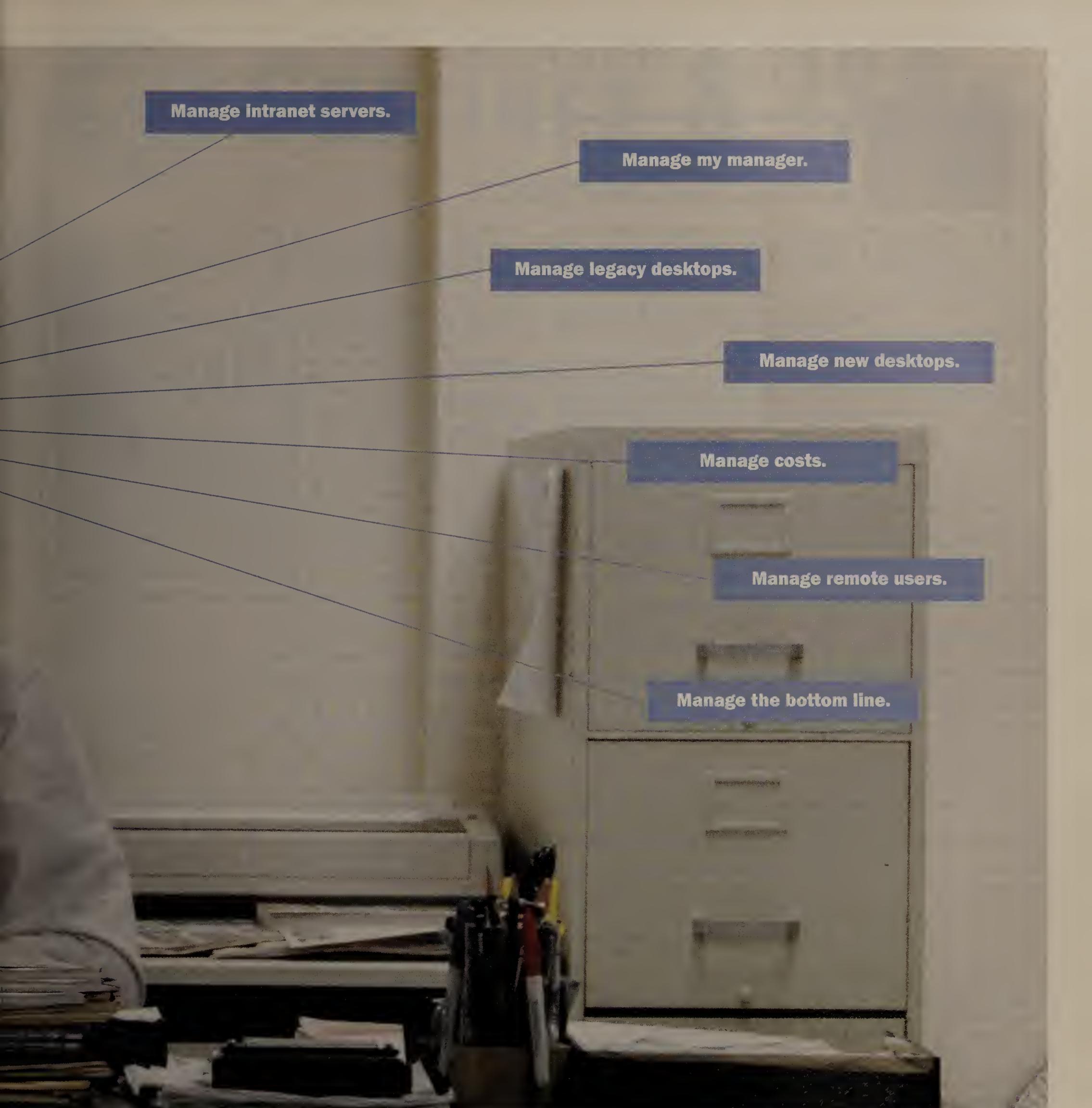
Manage staff time.

Manage e-commerce site.

Manage Web servers.

Manage central database.

**We've made the Windows 2000 platform more manageable than ever. For obvious reasons.** Clearly, you have a lot on your mind these days. But now there's help: Microsoft® Windows® 2000-based management solutions are designed to simplify your workload. Companies such as Data Return, Eaton Corporation, and Northrop Grumman Corporation, working with service partners such as Compaq, are using these solutions today. As a result, they're realizing reduced IT management costs, higher profitability, and increased customer satisfaction. For more information on how to better manage your Windows-based infrastructure, visit [microsoft.com/business](http://microsoft.com/business) Software for the Agile Business.



Manage intranet servers.

Manage my manager.

Manage legacy desktops.

Manage new desktops.

Manage costs.

Manage remote users.

Manage the bottom line.

**Active Directory™ service and Group Policy features in the Windows 2000 Server Family** simplify management, strengthen security, and extend interoperability across both users and devices.

**Application Center 2000** provides integrated tools for deployment, management, and monitoring of Web applications, making the management of Web server farms as simple as managing a single server.

**Microsoft Operations Manager 2000** provides an enterprise-class event-management and performance-management tool for the Windows 2000 Server Family and Microsoft .NET Enterprise Servers.

**Systems Management Server 2.0** provides comprehensive hardware and software inventory, enterprise software distribution, remote control, and software metering for Windows-based desktops and servers.

**Microsoft**



Wired Windows . Dave Kearns

## KEEPING AN OPEN MIND

I've come to the conclusion that there is too much data available, and we're using inadequate filters to contend with it.

I base this on the responses I get to things I write in this column and the newsletters I write for Network World Fusion. Some people — and in some cases a large number of people — don't bother to read and digest the entire 400 to 500 words. Instead, they see a "hot button" and start firing from the hip. How else could I be called a "typical Microsoft paid-off journalist" and a member of the "typical Unix-loving, Microsoft-hating press" — both in the same day?

I said that the upcoming release of Windows XP was for the home user, not the office. The response from one "reading-challenged" correspondent?

"This Dave Kearns guy is obviously

a Mac user with absolutely no objectivity. In reading this it's clear that he went off his bias and rumors he had heard about the new Windows XP, rather than beta-testing it first. People are more interested in games, digital cameras, home movies, etc. than ever before."

In a recent "Focus on Directory Services" newsletter, I said the Open Source movement should be working harder on directory-enabled applications than on another revision of the Open Lightweight Directory Access Protocol server. In passing, I mentioned that Active Directory comes with every Windows 2000 server. The response? "The author ought to be sent to a re-education camp and banned from using the Internet" for suggesting that people use a Microsoft product.

Technology isn't religion or politics. Saying something nice (or not so nice) about one technology does not imply anything about competing technologies. If I happen to like Microsoft's Exchange Server and SQL Server (for particular applications) that doesn't mean I hate GroupWise or Oracle (or Notes or Sybase, for that matter). If I say I don't like XP as a desktop operating system, it doesn't mean I don't like it for home use. Nor does it say anything about my feelings about Linux!

Lest you think these are isolated instances, hop over to the forums on Network World Fusion ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 5227) and see what people are saying in response to not only my columns, but those by Scott Bradner, Mark Gibbs, Fred McClimans and Kevin Tolly.

*Dave Kearns, a former network administrator, is a freelance writer and consultant in Austin, Texas. He can be reached at [wired@vquill.com](mailto:wired@vquill.com).*

## Tip of The Week



I'm on the road to San Diego next week for two conferences, The Burton Group's Catalyst conference (at the Marriott) and Tim O'Reilly's Open Source Convention (at the Sheraton). Accost me at either and let me know how you feel about the state of technology.

### Novell, continued from page 19

HTTP, secure HTTP, Unix/Linux Network File System, Microsoft Common Internet File System and Novell's NetWare Core Protocol (NCP).

It is one of the first NAS subsystems to support Novell's NCP file system and NDS eDirectory. Future releases of the software will include sup-

port for Macintosh and Web-based Distributed Authoring and Versioning users.

The NetDevice NAS connects to any 10/100/1000M bit/sec Ethernet network and will run on any NetWare 5.1, Windows NT/2000, Linux or Unix file server. It will also work in NetWare 3.X and 4.X nets. Novell is finalizing its approved equipment list with vendors such as IBM, Compaq

and Dell. But a customer could expect to install the NAS software on a Dell PowerEdge 2550 server attached to an external storage array.

A number of other vendors, such as Quantum, Maxtor and Procom, also market NAS devices for NetWare networks. With the exception of Maxtor, these NAS systems are for older bindery-based NetWare 3.X networks. The

bindery was a flat-file database that contained information on users, servers and workstations on the network. NDS eDirectory replaced it in NetWare 4.X and 5.X.

"The lack of NDS support [on vendors' NAS boxes] has kept me from implementing NAS," says Jon Nori, MIS director for Destiny Image Publishers in Shippensburg, Pa.

"I have Novell, Microsoft and Macintosh storage spaces on my network spread across various servers. I like being able to manage all my users and resources from one central location," he adds.

The NetDevice NAS uses Novell's NDS eDirectory, which manages and controls user access and authentication to the device and provides a central management utility to manage all NAS devices. It also uses Secure Sockets Layer encryption for Web-based file access and RSA encryption for links to NDS eDirectory.

The NAS software supports Windows Domain Controllers, Windows workgroups and Unix's Network Information Services (NIS) namespaces, allowing for management of users from Unix or Windows, as well as NDS eDirectory. NIS simplifies network administration by containing information and addresses for users, workstations, servers and other

resources on the network.

The NetDevice NAS is managed from Novell's ConsoleOne utility or a browser-based tool that can reside on any Unix, Linux or Windows workstation. Managers can also upload configuration file changes to the device using FTP. When Novell introduces changes to the software, network managers can download them and apply them using Novell's Softchip technology.

Installing the NetDevice NAS is easy, Novell says. The network manager installs the hardware, connects it to an Ethernet port on the network and points a Web browser to the device. The NAS device will ask for an IP address. Then, the network manager needs to specify which file systems need support and, if they are putting the device into an existing NetWare network, merge the NAS device with any existing NDS trees.

The NetDevice NAS will be available in August priced at \$1,800.

Novell: [www.novell.com](http://www.novell.com)

[www.nwfusion.com](http://www.nwfusion.com)

# A BETTER BUS

Read how InfiniBand, a switched-fabric I/O technology, links servers to network and storage devices, and follow our latest InfiniBand news links.

DocFinder 5229

Novell Netware

Subscribe to our free newsletter.  
DocFinder: 5434





# Carriers & ISPs

**The Internet, Extranets, Interexchange  
and Local Carriers, Wireless, Regulatory Affairs**

## Briefs

Global Crossing announced last week it is establishing points of presence within six Equinix network access points. Global Crossing will sell dedicated network services to other service providers that exchange traffic at the Equinix sites.

Global Crossing will also establish interconnection agreements with some of the 30 service providers that peer at the Equinix sites. The NAPs are in New York, Washington, D.C., Chicago, Dallas, Los Angeles and Silicon Valley.

Global Crossing: [www.globalcrossing.com](http://www.globalcrossing.com)

Verizon is expanding its presence in the Dallas/Fort Worth area by building out its facilities-based network in the Metroplex region. The Metroplex contains more than 3,500 company headquarters. Verizon officials say the expansion will let more corporate customers access sites on Verizon's network with no handoffs involving other carriers. The expansion consists of six fiber-optic rings. Verizon says it will also soon be expanding its networks in the Seattle and Los Angeles areas to better serve enterprise customers.

Verizon: [www.verizon.com](http://www.verizon.com)

Last week metropolitan Ethernet provider Yipes Communications introduced a new service designed to support mission-critical applications. Called Yipes Tough, the service provides 100% redundancy through a fiber-ring architecture, additional customer premise equipment and 24-7 network monitoring. Yipes offers customers bandwidth on-demand ranging from 1M to 1,000M bit/sec in 21 markets.

Yipes: [www.yipes.com](http://www.yipes.com)

## It's possible to find a solid CLEC

*Experts identify positive attributes, but long-term future is anything but guaranteed.*

BY MICHAEL MARTIN

The list of competitive local exchange carriers that have failed is growing with each passing week. Yet amid the carnage, a select few CLECs are managing to survive and attract new customers.

How can a company considering handing some or all of its business to a CLEC determine if a particular provider will be around for the long term . . . or if it will be the next to fail? The judgment is still something of a crapshoot, but industry observers say there

### What to look for in a CLEC

**Determining who will survive isn't easy. Here are some tips that should help with the decision:**

#### What you want in a CLEC:

- Owns at least some network elements.
- Cash on hand and at, or near, profitability.
- Cost savings, or advanced services other carriers don't offer.

#### What you don't want:

- Complete reliance on reselling ILEC services.
- A vast pool of debt with profitability at least five years away.
- For large companies, a CLEC that doesn't have broad reach.

are characteristics that should help distinguish the long-term survivors from flashes in the pan.

A study completed last month by

Robert Crandall, a senior fellow at the Brookings Institution, an organization which studies government policy and economics, found that a CLEC's choice of business strategy was the key factor in determining whether it would succeed.

Crandall identified three CLECs that appear to be doing well — McLeodUSA, Time Warner Telecom and Allegiance Telecom — and found common attributes

that could explain their success.

Perhaps most important, all three CLECs are at least partially facilities-based. CLECs that rely exclusively on reselling services from incumbent providers don't fare nearly as well, Crandall found, although incumbent local exchange carriers (ILEC) resale can be part of a successful CLEC's overall strategy.

While having some owned facilities is a key to success, building out facilities too quickly is a fast path to failure. Crandall says the reason many CLECs, including ICG and NorthPoint Networks, failed, is they built out expensive networks in areas where they had yet to establish significant customer bases. The buildouts quickly drained their cash, and there was little income flowing in to replenish the CLECs' capital.

### Special services

Another important component in a successful CLEC strategy is offering a service that's different from anything an ILEC is providing. One example of a CLEC that's succeeding by differentiating itself is Focal Communications, says Jeff Moore, an analyst with Current Analysis.

Focal is winning over Fortune 1000 companies by offering them one integrated bill for all their offices across the U.S. This is something the regional Bell operating companies have been unable to do because they don't operate nationally. For example, a company with offices in New York and Los Angeles would get separate bills for its operations in each city if it used an RBOC.

Concentration on a particular market  
See **CLEC**, page 24

## AT&T Wireless leaves the nest

BY DENISE PAPPALARDO

REDMOND, WASH. — AT&T's move last week to convert its AT&T Wireless tracking stock into common shares will reduce the company's burdensome debt level . . . but not by much.

The company announced that it generated \$1.6 billion in the stock transaction that will be used to cut the company's \$47.5 billion debt. AT&T expects to bring in an additional \$1.4 billion in six months after it converts its remaining AT&T Wireless shares.

While AT&T says its wireless services and management team will not change in light of the spin-off, there is a sense of confusion among some salespeople, says Lisa Pierce, an analyst at Giga Information Group and a columnist for *Network World*.

AT&T customers have had trouble closing multiservice deals that include wireless services that will contribute to their total annual contract, she says.

AT&T, like most large telecommunications companies, offers users volume discounts if they commit to spending a certain amount on services annually. Users typically can apply multiple services, such as frame relay, Internet access and wireless, to their total volume.

AT&T says there is no change in policy and users can apply wireless dollars spent toward their yearly commitments, but that message is not resonating with the company's sales staff, Pierce says. "Within the last six months, the salespeople have been getting mixed signals and are confused and have been telling users that this isn't true."

While there may be no change in policy, a huge restructuring such as this will at the very least create confusion. As this is the first of the company's planned four-way split, users should expect additional disorder. AT&T announced its restructuring plan last October as a way to reduce overall debt.

Despite Comcast's bid last week to buy AT&T Broadband, the company's cable network division, AT&T says that unit is the next to be split off. Comcast is bidding \$45 billion in stock and says it will assume \$13.5 billion in debt. AT&T said in a statement that it is not seeking a buyer, but will consider Comcast's proposal to see if it's a better option for shareholders. □

### Wireless

Subscribe to our free newsletter. DocFinder: 5434





Eye on the carriers . Johnna Till Johnson

## WHY INCUMBENT CARRIERS HAVE AN ADVANTAGE

Some years back, when MCI sold its Internet backbone to Cable & Wireless to satisfy regulators, I wondered what really comprises a telephone company's communications network.

That's easy, you say — it's a passel of switches linked by high-bandwidth circuits.

But is it really? The lifetime of a core router within the largest Internet backbones is roughly 18 months. And these days, most service providers lease a portion of their network circuits from other service providers, so "purchasing" these circuits boils down to assuming the lease.

So what MCI really sold to C&W was a collection of aging switches and the right to send packets across (someone else's) wire. When the lease expires and the equipment is depreciated, precious little will be left. That's when it became clear that

in a meaningful sense, a carrier is both more and less than its boxes and bandwidth.

When I heard of the MCI/C&W deal I asked which of the many Internet gurus then in MCI's employ was going to decamp for C&W. Why did that matter? Well, at the time, Internet backbones were notoriously complex and finicky beasts (come to think of it, that's still true). The number of folks who understood core routing protocols such as Border Gateway Protocol could be counted on one's fingers and toes. A solid supply of such gurus was essential for any service provider hoping to offer IP services.

So, one might say that a network really consists of the people with the savvy and know-how to effectively put together its switches and wires. But that's not enough, either. AT&T has some of the best and brightest network engineers in the

business. Yet, when the company suffered a catastrophic outage of its frame relay network a few years ago, one of the main causes turned out to be the processes its engineers followed in the testing and turn-up of data services. One of the fixes was to deploy the same processes for the data network as for AT&T's "core" (such as voice) network. So good people aren't enough — processes count, too.

Brooke Stockton, Greenwich Technology Partners' operations support systems guru, says enabling services to be effectively deployed requires integrating people, processes and technologies. He's right. I'll take that further and say that those three elements are the fundamental components of a service provider.

That has important implications for users. People can be hired, cutting-edge technologies can be

bought, but effective processes are only developed through years of experience. That's why incumbent providers, in general, have an advantage over start-ups: They already have effective processes in place. Processes represent intangible assets, but very real ones. And effective processes (for service turn-up, problem resolution, service-level agreement verification, what have you) can materially affect a user's experience with a service provider.

So next time your contract comes up for renewal, take a hard look at your carrier's processes and procedures, and make sure they're up to snuff.

*Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johnna@greenwichtech.com.*

### CLEC, continued from page 23

or market segment is also a sign of a successful CLEC, Moore says. For example, McLeodUSA concentrates on serving some states more than others. In Iowa and Wyoming, the company accounts for more than 40% of the business lines in the market, he notes. Similarly, Allegiance concentrates on the small-business market segment requiring a T-1 pipe or less. This has allowed the company to get decent penetration, Moore says.

### Barriers to overcome

Still, even if a CLEC manages to do all the right things to succeed, there's no guarantee it will.

CLECs depend on access to RBOC local loops and central offices to get services out to end users. This access is regulated and enforced by the Federal Communications Commission. The new commission, headed by Michael Powell, has made it clear that it wants to regulate as little as possible.

Which isn't a good sign for CLECs, says Abby Christopher, an analyst with Ovum.

"The new administration is making it more difficult for CLECs to survive in the market," she says.

While Time Warner, McLeodUSA and Allegiance are often cited as CLEC successes, their stock prices don't necessarily bear that out. All three are trading just above their 52-week lows and well off their 52-week highs.

The bottom line is that any company looking at moving business to a CLEC should do a lot of investigation.

"Any CLEC right now is vulnerable," Christopher says. "To assess the risk of moving to one of them, any potential customer is going to have to do a lot of due diligence." □

[www.nwfusion.com](http://www.nwfusion.com)

## CLEC QUESTIONS

Download a report on the status of competitive local exchange carriers five years after the passage of the Telecommunications Act.

**DocFinder** **5230** **online**

## W3C releases draft of SOAP standard

*'Significant milestone' reached for Web messaging technology.*

BY CAROLYN DUFFY  
MARSAN

The World Wide Web Consortium last week released its first draft of the Simple Object Access Protocol, a much-anticipated messaging protocol that's expected to lay the technical foundation for future Web services.

The SOAP standard provides a basic mechanism for Web applications to communicate with each other to provide services seamlessly to end users. For example, SOAP would let a company Web site display a real-time stock quote from a financial Web site or a manufacturer's Web site to display pricing from a distributor's Web site.

The latest version of SOAP is important because it represents W3C's first crack at turning this technology, which was developed by Microsoft, into an industry-wide standard. W3C officials say 44 companies, including Microsoft, IBM and Sun, worked on the current draft.

"This is a significant milestone," says David Fallside, who chairs the W3C's XML Protocol Working Group that is developing SOAP. "It shows the W3C is making progress with SOAP. . . . It says we've taken ownership of SOAP."

SOAP Version 1.2 is now available for Web developers to review at the W3C's Web site.

The W3C launched its SOAP initiative last September, and the international standards-setting body previously released a document outlining the functional requirements for SOAP.

The new version of SOAP features several changes including:

- Consistency with W3C's XML Schema, which is a shared vocabulary that lets machines carry out rules made by people.
- Consistency with the W3C's standardized naming format known as uniform resource identifiers.
- Clarification of ambiguities in such areas as processing multiple message headers and handling header errors.

Fallside estimates the W3C

working group will issue a final version of the SOAP specification early next year.

"We'll see another one or two working drafts," Fallside says. "There's some more clarification work to be done before we reach the last-call phase."

Web developers are monitoring the SOAP specification and view it as a foundation of new business-to-business interactions on the Web. Microsoft has committed to supporting SOAP 1.2 in its .Net vision for Web services.

Among the organizations that have technologists participating in the W3C's SOAP efforts are the Library of Congress, DaimlerChrysler, Canon and Philips Research.

"We are the largest working group of the W3C right now," Fallside says. "There's a lot of interest in SOAP as a foundational technology in the larger picture of Web services."

For more information, visit the W3C SOAP working group's Web site at: [www.w3.org/2000/xp/Group/](http://www.w3.org/2000/xp/Group/).



# The Edge

**Service provider developments at the juncture between the enterprise and the new public network**

## Briefs

Aura Networks has announced that it has become Metrobility Optical Systems to "reflect the company's strategic focus in the optical Ethernet metro-access market." Under the Aura name, the company developed the Radiance Optical Ethernet System, which provides WAN remote management for optical Ethernet. The company also provides fiber-optic connectivity equipment.

Metrobility: [www.metrobility.com](http://www.metrobility.com)

VIPswitch and Alloptic have announced a partnership that the companies claim will let service providers offer scalable and cost-effective services ranging from data to voice and video by using optical Ethernet technologies in metropolitan-area networks. Alloptic will provide its equipment for fiber to businesses and fiber to the curb. VIPswitch will supply the metropolitan network equipment, including the V-MAN, an application-aware, wire-speed router.

VIPswitch: [www.vipswitch.com](http://www.vipswitch.com); Alloptic: [www.alloptic.com](http://www.alloptic.com)

Geyser Networks has announced that CoServ Communications, a single-source utility provider, is conducting field trials of the Geyser OSM 4800 Optical Services Manager. The companies say they will work to test system performance criteria, system reliability, and ease of provisioning and operational functions. CoServ is slated to use several features of the OSM 4800, including dense wavelength division multiplexing, SONET cross-connect, SONET ADM, time-division multiplexing services, ATM, frame relay, packet over SONET, transparent LAN services and the new managed SLA-based IP/Ethernet services. As part of the trial, CoServ will deploy the product between two central points of presence in the North Dallas area.

BY TIM GREENE

**D**orado Software has an effort under way that ultimately could make it easier for telecom equipment to support advanced services and reduce provisioning times for service provider customers.

Dorado will accomplish this via a program for delivering its management software for the gear that makes up telecommunications networks.

Dorado's New Equipment Manufacturer Services (NEMS) initiative would make it easier for provisioning or quality-of-service software platforms, for instance, to control the devices in service provider networks.

With this capability, service providers could turn up services faster and even offer services they could not offer before, Dorado claims.

The program will also make it possible for equipment makers to deliver element management systems (EMS) more quickly and affordably than they could themselves.

Equipment makers will have three

options:

- Have Dorado develop an EMS for a particular device.
- Buy tools so they can write their own EMSs.
- Enhance existing EMSs so they can work with other software, such as applications for trouble ticketing or policy-based provisioning.

Malibu Networks, which makes fixed broadband wireless gear, is using Dorado's development tools. The tools include an application server, database, SNMP software and other necessary features that Malibu would otherwise have to write itself.

This saves the company time in delivering an EMS, says Patrick Billquist, a software engineer at Malibu.

NEMS is an expansion of a previous Dorado effort called Mini OSS (Operations and Support System) that sold software packages for only certain applications.

Historically, equipment vendors have provided some sort of management software for their products. But these products don't often supply software

interfaces to third-party software. For instance, a service provider might have devices in its network that are made by multiple vendors and would like these devices to be integrated with a provisioning software platform. Integration would be difficult with existing gear because the provisioning software would have to be able to speak to all the EMSs of the different boxes via a variety of methods, including SNMP, Telnet and command line interfaces. □

[www.nwfusion.com](http://www.nwfusion.com)

## RAPID DELIVERY

To get a sense of what the NEMS initiative may improve, download information about Dorado's Mini OSS.



## ADVA Optical touts network-planning tool

BY TERRI GIMPELSON

**R**AMSEY, N.J. — ADVA Optical Networking has released a proprietary network planner for its Fiber Service Platform that the company says will let service providers plan complex network deployments and changes that occur when adding nodes.

ADVA says the planner guides users through a step-by-step process of determining network requirements.

The program calculates an optimal network plan, including topology, architecture, wavelengths and equipment requirements. It will also generate a rack layout that shows where cards should be placed and how they should be interconnected.

FSP supports point-to-point, linear add/drop and ring topologies. ADVA says the planner will also generate a detailed parts list that includes respective pricing information and a cable running list.

### ADVA's network planner touts error-free results

**Windows-based tool is said to take the guesswork out of network building. Features include:**

- Proprietary program works with FSP product line.
- Seamless integration via Common Object Request Broker Architecture interface.
- Supports any architecture and topology.
- Generates detailed lists of pricing and equipment.
- Detailed instructions for box connections and card placement.

A user has the option to override any of the program's suggestions or forward the detailed list as a purchase order to ADVA.

Additional features include in-band Optical Supervisory Channel, which lets the carrier monitor all the equipment of a dense wavelength division multiplexing ring without using an external Data Communications Network or using any of the user bandwidth in the ring.

ADVA says this reduces the amount of

equipment needed and the complexity of managing the network.

Steve Walker, senior project manager at XchangePoint, says the planner has been an important tool in preliminary network planning and in modeling the future development of networks as they are added. XchangePoint is dedicated to building Internet exchange point facilities for inter-ISP peering and traffic exchange in major European cities.

Walker says the program was "fairly straightforward in creating and specifying topologies and setting up channels. There are no big holes in the product, but it did need a bit of tweaking in the beginning."

While Walker says his firm might have liked to see a product that provided multi-vendor network planning, he adds that kind of labor-intensive project is not necessary.

ADVA's FSP network planner is currently shipping. Pricing was not available. □



60 GIGABIT PORTS, 10-GIGABIT UPLINKS, WIRE-SPEED

RS16-CHS



## METRO ROUTER WITH MPLS. ALL IN 5 RACK UNITS.



Introducing the RS 16000 from Riverstone Networks.

It's the new generation of router built expressly for Gigabit and 10-Gigabit Metropolitan Area Networks.

The chassis-based RS 16000 delivers up to 60 wire-speed Gigabit ports, along with 10-Gigabit Ethernet and CWDM uplinks all in 5 rack units – that's 70% more Gigabit ports per rack inch than the nearest competitor. For service providers, this means more revenue per rack and lower operating costs.

But the RS 16000 is more than the highest density router in the industry. As a full function, Internet-caliber metro-optimized router, it also delivers rich service creation capabilities. Through hardware-based MPLS, bandwidth carving, and extensive billing and accounting, the RS 16000 converts raw bandwidth into profitable services for carriers throughout the Metropolitan Area Network.

Contact Riverstone Networks at 1-877-778-9595 or visit [riverstonenet.com](http://riverstonenet.com) to see how we're changing the rules in the Metro.



**River**  
**STONE**  
NETWORKS

Bandwidth with Brains

They knew the technologies would be there.

The experts would be there.

The exhibitors would be there.

The leaders would be there.

SUPERCOMM 2001 would be the event.

Thanks for making the

**right** choice.

To the exhibitors and the attendees, the investors and the press, SUPERCOMM extends the heartiest thanks. At a time when there are question marks in the industry, you came to the right place for answers. And networked with thousands of communications professionals from around the world. The unique interchange between buyers and sellers, investors and innovators, will help shape the industry in the months ahead. That's why SUPERCOMM remains the best venue to show so much to so many in so few days. So you're better prepared to thrive in this changing industry. See us in 2002 in Atlanta and See What Will Be.

SUPERCOMM 2001 extends  
special thanks to

**NetworkWorld**

Publication Partner

**SUPERCOMM**

Explore the Whole World of Communications

Atlanta Georgia June 2 - 6 2002 [www.supercomm2002.com](http://www.supercomm2002.com)

# Enterprise Applications

Intranets, Messaging/Groupware, E-commerce, Security, VPNs, Network Management, Directories



## Briefs

Gordano last week ported its Linux-based GLMail Internet e-mail system to Unix. GLMail is mail server software that uses standard Internet protocols such as Simple Mail Transfer Protocol and mail clients such as Post Office Protocol 3 and Internet Message Access Protocol 4. It also features remote and local configuration via a Web-based browser, message and log archiving with automatic compression, and Lightweight Directory Access Protocol connectivity. The mail server features mail directory and search capabilities, as well as a scripting language and a Web proxy server that acts as a gateway to the Internet for the office. GLMail costs \$750 for 50 users and is available now.

Gordano: [www.gordano.com](http://www.gordano.com)

The Free Software Foundation last week said it will support two new free software alternatives to Microsoft's .Net platform, called the Mono and DotGNU projects. While Mono and DotGNU will offer different components to .Net, they will be complementary, the foundation said. Open source software maker Ximian is leading the development of the Mono project, which is aiming to be a GNU/Linux-based version of the .Net development platform. It will include .Net-compliant components such as a C# compiler, a Common Language Runtime just-in-time compiler and a full suite of class libraries. Any .Net applications that are developed on the Mono software could be run on Windows or any Mono-supported platform, including GNU/Linux and Unix, the foundation said. As for DotGNU, the project will seek to develop free software for enabling decentralized services and authentication.

Mono project: [www.go-mono.net](http://www.go-mono.net); DotGNU: <http://savannah.gnu.org>

IN-SITE: Lessons from Leading Users

## ASP play saves Myfujifilm.com millions of dollars

BY JENNIFER MEARS

The way Kirk Brauch, director of technology for Myfujifilm.com, figures it, Fuji Photo Film U.S.A. saved big with the decision to use an application service provider to handle its new Internet-based applications for its graphic arts customers.

"This was not something that we considered a core competency, and we did not want to do it in-house," he says. "If I had to do it myself — contract engineers, build data centers — I'll take a stab and say that for a company like Fuji we probably saved a capital outlay of \$2 million to \$3 million."

About a year ago, Fuji realized that an increasing number of its graphic design clients were demanding digitally based services. They wanted to manipulate and transmit images online instead of doing things with the traditional photo paper and transaction systems that Fuji sells.

The question was "how are we going to replace lost revenue, and as our customers leave conventional workflow and move to digital how can we help them out," Brauch says. "We said we need to give customers an easy way to manage their digital workflow."

That's where Myfujifilm.com comes

### Fuji hits the Web

Breakaway Solutions hosts Fuji's production applications while helping it manage storage and capacity planning.

1 Fuji ties into the Breakaway data center through a point-to-point VPN from its network.

2 Myfujifilm.com applications reside on a combination of Web servers, application servers and database servers; images are stored on the database server and the enterprise storage system.

3 Fuji clients access myfujifilm.com using the Internet.

4 The client is routed through load-balanced firewalls, load balancers and then into the Web servers, which access the applications and images.

Breakaway data center hosted by Exodus

in. Myfujifilm.com is an e-production Web site that addresses the business-to-business needs of the graphic arts industry, letting users perform tasks such as proofing, formatting and col-

laboration online.

But Brauch knew it wasn't something Fuji could do alone. "Fuji is a

See Fuji, page 30

## WebTrends lets customers harvest site traffic

Web log package tracks visitor requests, navigation paths for Siebel.

BY ANN SULLIVAN

SAN JOSE — There's a hoard of customer information contained in Web server log files, but often only the IT department sees that data.

WebTrends wants to change that.

WebTrends got its start analyzing Web logs — where Web visitor data is harvested — for IT users. Now WebTrends wants to get its Web visitor analyses into the hands of marketing, sales and service people. To do so, the company, which was bought by network monitoring software vendor

NetIQ in January, is aiming its new software package at users of Siebel Systems' customer relationship management (CRM) applications.

The WebTrends Data Conduit for Siebel eBusiness Applications lets Siebel users access Web site data captured by NetIQ's CommerceTrends platform, which tracks data such as how visitors entered and exited a site, referring pages, requests for information and navigation paths.

With this data, a sales representative at a software company, for example, could see that a prospect visited the company's

See WebTrends, page 30

www.nwfusion.com  
TRACKING THE  
TRAFFIC

Read about another Web site traffic analysis tool that manages content based on how users navigate a site.





'Net Insider . Scott Bradner

## NOT FOR THE 4TH

I couldn't write this column last week — I just couldn't bring myself to write about the voiding of many of our liberties in a week that included the celebration of the first steps toward those same liberties.

Aside from an occasional course correction (such as the Supreme Court's recent decision that the use of thermal scanning devices to look through walls violated constitutionally guaranteed rights), there has been an unrelenting drumbeat of attacks on the fundamental human rights of people in modern society.

The worst of these attacks are taking place in Europe, but many in U.S. law enforcement seem to be looking longingly at what is going on there. For example, there is a proposal on the table that would require all Euro-

pean ISPs to save up to seven years of their customers' e-mail on the off chance that the police might want to have a look. Europe is not alone in this. Face-recognition software tied to TV cameras now watches people attending U.S. ball games.

Technology has made these attacks possible. Without the enabling technology, guards at airport checkpoints would have to strip-search every traveler to get the same view of their private parts that a new type of X-ray machine now under test gives them. It is only very fast computers and the digitization of everything that lets a proposal such as the European data storage idea be theoretically possible.

Many of these attacks are ones that would have been dismissed

instantly as way over any threshold of reasonableness without the technology that makes their operation invisible to the people who are affected. People would quickly rebel if the post office cut open and copied every letter they handled or if everyone going to the ball game had to stop to get mug shots taken.

But just because these attacks are invisible does not make them any less attacks. In the name of safety, law enforcement or national security, governments all over the world are turning people into well-observed laboratory rats.

It could be argued that we would have a safer world if the police were not constrained by the notion that individuals have some rights. I will disregard for the moment that police

are also people and have sometimes proven to be fallible. I'm not all that sure that there would be much human about people in such a world.

The U.S. Bill of Rights may be a local ordinance on the Internet, but there was a lot of history that made it necessary to write it down. Modern governments seem to have forgotten that history. Or maybe they have just forgotten that humans exist.

**Disclaimer:** Harvard long predates the Bill of Rights and trains lawyers to defend (and attack) it, but the above rant is mine.

*Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.*

### Fuji, continued from page 29

hardware manufacturer, but knows nothing about the Internet and Internet business," he says.

So the film company contracted with publishing software maker Engage for help in writing its new applications.

At that time, the search also began for a hosting provider to handle the infrastructure and connectivity needed to provide an Internet-based digital production and asset management system. Brauch says he looked at telecommunication providers such as WorldCom and AT&T, as well as hosting companies such as Exodus and Level 3.

He finally settled on Breakaway Solutions, a self-described full-service provider, which offers clients everything from application hosting to professional services.

"The fact of the matter is Breakaway has contacts with all of them," Brauch says.

Breakaway leases data center space from hosting providers such as Exodus and Level 3 and uses a range of telecom companies for redundant connectivity services.

But one of the most important reasons why Myfujifilm.com chose Breakaway, Brauch says, is that in addition to managing standard applications, Breakaway hosts custom appli-

cations and has years of experience in handling collaborative e-commerce applications.

"Breakaway has something called an application management service, which is an additional layer of application servicing you can buy. They learn the application for you," Brauch says. "That was a key thing."

Breakaway is hosting the equipment it leased to Myfujifilm.com — six Sun Solaris Web and application servers and database — in an Exodus data center in Waltham, Mass. It provides managed services to Myfujifilm.com, including system monitoring, capacity testing and storage.

Customers access the system via the Internet, where they can manipulate images, collaborate, check e-mail and store digital images that often involve "huge packets of data," Brauch says.

There are four customers using the beta-test version of Myfujifilm.com that integrates technology from Engage, graphic design workflow software maker GroupLogic and software publishing company Markzware.

Almost immediately after Myfujifilm.com decided on Breakaway last fall, it had its infrastructure in place so the software could be tested in a production environment. "That's the thing about an ASP ... you get amazing speed," he says.

He says Myfujifilm.com hopes to bring on more beta clients, and put the software in wide release by the end of the summer.

Myfujifilm.com takes the IT headache away from Fuji clients such as printers, trade shops, advertising agencies and publishers. Instead of having to invest in their own equipment and technical support, clients get the service from Myfujifilm.com.

And Myfujifilm.com can provide it quickly and cost effectively thanks to Breakaway, Brauch says.

"The whole concept is if I've got to shop for the talent it's going to take me months. Breakaway's already got the talent," he says, adding that an ASP gives him immediate access to the best technology. "ASPs are smaller and lighter on their feet and employ technology faster."

But that doesn't mean companies should turn the reins over to an ASP, Brauch says, noting he's constantly in contact with his Breakaway project manager. For example, he says he'll be closely watching Breakaway's end-user support. ■

### ASPs

Subscribe to our free newsletter. DocFinder: 5434



### WebTrends, continued from page 29

Web site, browsed its product pages, read a white paper and downloaded a trial application — actions that suggest this is a good prospect to pursue. Or a marketing manager could see how many hits resulted from a particular e-mail campaign, and where those visitors came from.

The appeal of the system is that it puts Web visitor information in front of the people who need it, in a familiar interface and without requiring them to seek out and sort through Web log reports, observers say.

#### Identifying users

However, key to the conduit's effectiveness is Web visitor identification. "You've got to somehow connect the visits with the people you're interested in," says Guy Creese, Aberdeen Group research director. It's not enough to do a simple reverse DNS lookup and trace a visitor to a particular company, Creese says. Sales representatives want to know that someone in a position to buy products was browsing their wares.

Sites that require visitors to log on or items that require registration to retrieve, such as white paper or software trial, can provide that

identification.

Using Web analytics to glean customer demographics or buying habits from Web logs is not a new concept; it's what companies such as Blue Martini and E.piphany do in their CRM suites.

#### Specifically focused

What makes the NetIQ-Siebel pairing different is that NetIQ's WebTrends line is focused specifically on Web traffic analysis, whereas its CRM counterparts tackle analysis of many different customer interactions, such as call center volume and transactional processes.

WebTrends has spent years tuning its applications to handle the enormous number of different Web log formats and developing reporting capabilities. This is one reason the NetIQ conduit might appeal to Siebel, Creese says.

Rather than starting from scratch to develop a Web traffic analysis product that likely won't have the depth of CommerceTrends, the NetIQ conduit lets Siebel deliver up-to-date functionality while staying focused on its own strengths.

Pricing for NetIQ's CommerceTrends platform with the Siebel conduit, available now, begins at \$150,000.

WebTrends: [www.webtrends.com](http://www.webtrends.com)



# Technology Update

An Inside Look at the Technologies and Standards Shaping Your Network

## Ask Dr. Internet

By Steve Blass

**My company has just merged with another, resulting in approximately 75,000 employees. The DNS between the two companies varies from Microsoft NT DNS to Unix/Solaris/BIND 8.2.3. We have a project to determine if we should move to one platform consisting of Lucent QIP software.**

What is your opinion on the following: Centralized or decentralized DNS? Windows 2000 or Solaris/BIND 8.2.3? Should DNS and Dynamic Host Configuration Protocol (DHCP) be on the same server? Should we use Lucent's DHCP product or Microsoft's?

Centralized DNS works well when you manage all the IP addresses in one IT shop. With two merging organizations you might look at a central DNS server that is configured as secondary for your collection of merging domains. This allows the existing primary DNS servers to do their work while your new central DNS server gathers together the organization's entire DNS database together via zone transfers.

The choice between Win 2000 and Solaris/BIND 8.2.3 DNS is a toss-up, except that Win 2000 DNS is built to work with Active Directory out of the box and BIND isn't. With 75,000 employees, I'd put DNS and DHCP on different servers. QIP is a very strong DHCP management tool, although the Microsoft solution would be my choice if you have big Win 2000 migration plans pending.

Blass, a network architect at Change@Work in Houston, can be reached at dr.internet@changeatwork.com.



## HyperTransport boosts bus speeds

Bus architecture can reduce data bottlenecks.

BY PETER ROBINSON

**H**yperTransport is a new, high-speed bus architecture that reduces data bottlenecks and boosts the performance of communications equipment, including PCs, workstations, servers, Internet routers, optical switches, networks, central office equipment and cellular base stations.

Now in the standards review process, HyperTransport is a scalable, point-to-point interconnection technology that

Legacy I/O bus architectures are widely used in embedded systems because they are inexpensive and easily implemented using established software and hardware standards. Unfortunately, these buses top out at around 66 MHz. But today's processors run at clock frequencies of 500 MHz to more than 1 GHz, with faster ones coming. HyperTransport I/O bus architecture can scale from narrow configurations with relatively low-speed (200-MHz) clock rates to upwards of 32-bit wide, high-speed

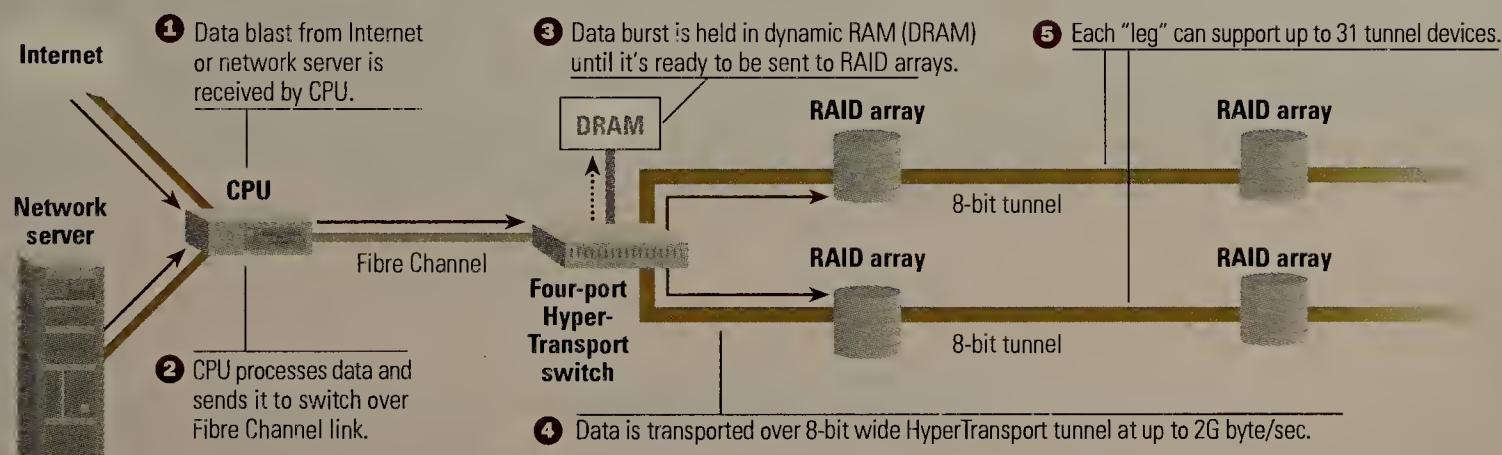
ed in that only one peripheral device can be plugged in (compared with four with traditional PCI). HyperTransport, on the other hand, can support 31 devices. With a switch it can support even more devices by creating huge HyperTransport fabric (tunnels that act as I/O building blocks) while keeping both systems and hardware costs relatively flat.

Finally, HyperTransport has the potential benefit of a low implementation cost, in addition to its flexibility,

## HOW IT WORKS

### HyperTransport

New bus technology offers highly scalable alternative to PCI.



provides a high-speed, high-performance link for embedded applications. This universal connection reduces the number of buses within a system and enables chips in any PC, networking or communications device to communicate with other devices up to 24 times faster than existing technologies.

HyperTransport is a scalable architecture that provides more than an order-of-magnitude increase in bus transaction throughput over existing I/O bus technologies, such as PCI, PCI-X and AGP.

### Got great ideas?

**Network World** is looking for great ideas for future Tech Updates. If you've got one, and want to contribute it to a future issue, contact Features Editor Neal Weinberg (nweinberg@nww.com).

(800-MHz and up) clock rates.

With HyperTransport, standard bus widths of 2, 4, 8, 16 and 32 bits can be used to fit the I/O bus characteristics to specific applications. Its inherent flexibility includes asymmetric bus widths to support different upstream and downstream bandwidth needs. A 16-bit HyperTransport I/O bus, for example, can deliver 25.6G bit/sec bandwidth capable of supporting two OC-192 SONET bit streams or two 10G bit/sec Ethernet links.

HyperTransport is backward-compatible with the widely deployed PCI externally visible bus standard. This means already-paid-for PCI software code need not be rewritten — an economic advantage in addition to getting a much faster interface.

One option for getting more bandwidth is to graduate to PCI-X, which operates at 133 MHz. But PCI-X is limit-

scalability and very high bandwidth. Because it is part of the processor roadmap for chip giant AMD's desktop PCs and server systems, HyperTransport will take advantage of economies of scale.

HyperTransport I/O bus architecture can provide the bandwidth for next-generation PCs, servers and communications systems. A multivendor standard that is easily implemented, it will offer a broad selection of bus widths and speeds that can match the power, space and cost requirements of a wide array of embedded systems — from low-cost desktop workstations to digital consumer applications, communications and networking equipment.

Robinson is technical evangelist at API Networks. He can be reached at peterrobinson@api-networks.com.

Gearhead . inside the network machine . Mark Gibbs

## DOING THE DATABASE SHUFFLE

Let's say you have a database and you want to use it to create content. Perhaps you want a file for each record in the database and pages that index the

record files according to different criteria. Why might you want to do this?

Let's say you have three or more Web servers that publish your product cata-

log and you don't want to buy a SQL Server for each one. Unless your catalog changes rapidly, you could, if you had the right tool, export an HTML page for each product and FTP the static pages to each server when they changed.

The tool that would make such operations simple is a called QueryWeb, and it

costs nothing. QueryWeb is a product from Alga Computing in Chile ([www.query-web.com](http://www.query-web.com)).

QueryWeb is a Windows 98/NT application that will extract records from a Microsoft Access database and, using templates, create files and, optionally, create subdirectory structures to store the files. Alga describes it as a tool for creating static pages that can be dynamically updated.

The templates are text files that specify where the data extracted from the database is to be included. You can create HTML pages, XML documents, Microsoft Internet channels (Channel Definition Formula files) and just about any content you might need.

To create content you first create a project. The dialog box lets you specify a project code, project name and database that will be used.

Next, you define the environment, which consists of variables that define its name and define the set of variables the project will use. Some variables, such as the script templates extension and the database URL, must be defined, and you can define as many other variables as you please.

A variable's value can be embedded in an output file by enclosing the variable's short name between pound signs in the template, for example, "#UGPT#". You can also use QueryWeb's internal variables such as the date and time to generate the date and time.



Alga Computing  
QueryWeb

1=awful, 10=insanely great

## Imagine an IT learning center created just for you.



Web Developer

Network Manager

Network Administrator

MIS Manager

V.P. Technology

## No matter what you do.

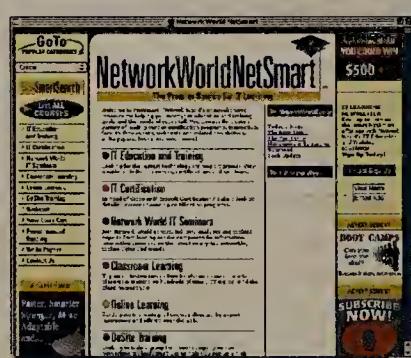
How can you quickly and easily find the best learning options available for you and your staff—without spinning your wheels?

Simply go to *Network World*'s new source for network and IT learning—NetSmart. Here you'll find everything you need to develop your skills, build your knowledge, and advance your career.

Do all this and more in one convenient place:

- Sign up for hands-on classroom training, e-learning, and certification programs from respected training providers like Global Knowledge

### Introducing NetSmart!



[www.nwnetsmart.com](http://www.nwnetsmart.com)



- Register for *Network World*'s face-to-face seminars, Town Meetings, and Webcasts.

- Buy informative technology and management books from leading publishers like McGraw-Hill.

- Access the latest networking white papers and newsletters.

There's no surfing the net for available options. No weeding through endless lists of irrelevant courses and topics. No wasted time and effort.

Go right to the source at [www.nwnetsmart.com](http://www.nwnetsmart.com).

There's no better way for you—and your staff—to get on the fast track. No matter what you do.

Sign up for the IT Training Solutions newsletter—FREE!  
Get e-mail updates on upcoming events, courses, seminars, and more. Register now at  
[www.nwnetsmart.com](http://www.nwnetsmart.com).

Next, you associate the required templates with each environment and can specify how often the content-creation process will run. The templates contain SQL queries to access the target data and within templates you can embed looping, for example, to create a table listing all products starting with "M".

When run on a project, QueryWeb will parse each template under each environment specified and attempt to create the required files. It also will create a log file to document any errors.

Take a look at the QueryWeb help page at [www.query-web.com/help/](http://www.query-web.com/help/) for examples, and check out the examples that are installed with QueryWeb—they'll give you a very good idea how the system works.

This is a great tool that has lots of uses other than building Web pages and Gearhead gives QueryWeb eight gear teeth out of 10 with a commendation for being free.

Got any cool tools? Tell Gearhead at [gearhead@gibbs.com](mailto:gearhead@gibbs.com).

There's a lot of confusion about  
converged networks.

On August 1st,

it'll all come together.

SIGN UP NOW FOR  
OUR FREE 1-HOUR  
WEBCAST

Sprint is pleased to present:  
"Network Convergence—Delivering Simplicity & Savings"  
August 1st, 2 pm (ET) Register now at  
[www.itworld.com/itwebcast/sprint\\_converge](http://www.itworld.com/itwebcast/sprint_converge)

Maintaining multiple networks and working with multiple vendors requires an enormous investment in time and money. To stay competitive, today's businesses need a more streamlined and productive communications platform. Network convergence is an optimal solution.

On August 1st, you'll have a unique opportunity to hear from some of the foremost experts on converged networks. Topics include the attributes of network convergence and the cost-effectiveness of simplifying your enterprise architecture. You'll also learn how Sprint ION® Integrated On-Demand Network, offers voice, video, data, and Internet on one platform, delivering speed, simplicity, and savings to your business.

During the interactive portion of the Webcast, you'll be able to weigh in with your own questions and opinions. It's an event you won't want to miss.

**Featured speakers:**

- **Jennifer Pigg**, Executive Vice President for the Yankee Group's Communication Hardware and Technology division, shares her insights about the market demand for and capabilities of converged networks.
- **Michael McRoberts**, Senior Director of Data Product Management for Sprint Global Markets Group, reveals how Sprint ION delivers a truly converged network solution.
- Plus, as a bonus, put your IT knowledge to the test in our Webcast trivia contest. You could win a free digital camera.

Reserve your space now at [www.itworld.com/itwebcast/sprint\\_converge](http://www.itworld.com/itwebcast/sprint_converge)

Produced by:

**NetworkWorld**

**ITworld.com**

**Sprint**

**Sprint ION**

## Editorial

### Creative thinking from the BIOS demigod

**P**hoenix Technologies, the king of the BIOS hill, has come up with a number of interesting initiatives that stem from its BIOS history.

One innovation is a suite of instant-on PC applications called FirstWare Rescue that can be evoked without loading the OS. Rescue enables PC makers to stash a full Windows image — and even some applications — on a protected spot on the hard drive. If things go south, Rescue can be used to rebuild the machine without the original software CDs.

Another Rescue application is FirstWare Connect, an instant-on Web browser that will let users access vendor support sites or download drivers as they attempt to resuscitate PCs, all sans OS.

The company is also hell-bent on a security scheme called FirstAuthority Trusted Device Infrastructure, which is innovative if not a bit ambitious. The basic idea is to get manufacturers to embed a ROM chip containing an RSA crypto engine into PCs and laptops so network managers can turn these devices into trusted network endpoints.

Dictating which machines have access to what involves an enrolling process whereby the computers contact a Phoenix device authority and go through a crypto dance that generates a unique device key that is stored in the ROM.

From then on, every time an enrolled machine makes a request for a secured resource, the device key will be brought up and forwarded. If it matches the application key, access is granted.

To reach pre-ROM machines, Phoenix has developed a CD product that generates a unique device key by assigning numerical values to things the BIOS normally checks, such as product ID and MAC address, and then doing a hash on that. While not as secure as the ROM version, it is said to be 20 times more secure than password-only protection.

Pretty nifty, but Phoenix has to convince a lot of players to participate. So far Compaq, Samsung and NEC have committed to building in the ROM, and IBM and HP are considering it. On the software side, Check Point has already agreed to build device-aware applications and Phoenix is working with Microsoft on the operating system and application fronts.

Whether or not Phoenix is successful seeing the security idea through, you have to give the company credit for all these creative ideas.

— John Dix  
Editor in chief  
[jdix@nwfusion.com](mailto:jdix@nwfusion.com)



## Message Queue

### TRANSFERABLE LESSONS

Regarding your editorial "Are DoCoMo's lessons transferable to the U.S.?" ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 5221):

As your column notes, there are more than 16 million iMode users in Japan. However, this doesn't necessarily reflect that 16 million people chose iMode. In reality, it is almost impossible to purchase a DoCoMo mobile phone without iMode being included. The vast majority of people are signing up for iMode without any real intention of using it; it is simply something that comes with your phone almost free. It would be accurate to say that 16 million people have either purchased a DoCoMo phone or changed the handset of their existing mobile phone account, and that this phone included iMode.

Although I have no idea how many people use iMode on a regular basis, I do know that many people use iMode-based e-mail. I think you really hit the nail on the head when you noted, "Fewer people in Japan have Internet access, because it's expensive, so iMode's success may simply reflect pent-up demand that won't materialize here." I think there is a real demand for e-mail without having to purchase a PC or get an Internet account.

DoCoMo's marketing strategy is to subsidize the additional cost of the iMode service and make it available to anyone for practically nothing. They did this because they believe the mobile phone market to be almost saturated and are looking for ways to increase the amount each customer uses their services. I am fairly sure that they will do the same thing in the U.S., and when given the choice of an iMode-capable phone at little or no extra cost, I think most people will go for it.

Simon Pratt  
Tokyo

### POWER PLAY

Regarding "Cisco backs power line networking startup" ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 5222):

I am very interested in broadband delivery technologies that get broadband access to the end of the

E-mail letters to [jdix@nwfusion.com](mailto:jdix@nwfusion.com) or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

[www.nwfusion.com](http://www.nwfusion.com)

## MORE ONLINE

Find out what readers are saying about these and other topics.

5225 online



line, whatever the line. Technologies that can enhance real competition in delivering broadband access will drive down broadband prices and increase demand for broadband, as well as for the capital equipment and technology that supports broadband. Leaving broadband to the incumbent local exchange carriers will result in high prices and reduce demand for both the service and the supporting infrastructure.

Jim Pivonka  
La Crosse, Kan.

### MORE HELP NEEDED

I found the Management Strategies story "Retrained and ready" ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 5223) insightful. But not everybody in the IT world who has received a layoff notice has access to a facility like Opportunities Industrialization Center West (OICW).

I have more than 18 years of IT experience but, alas, no certification. The people who are being hired now do not have the extensive troubleshooting experience I have, but get hired because of their certifications. There are not enough companies sponsoring programs like OICW.

Mike Miller  
Arlington, Texas

### NOTHING TO DREAD

Regarding "App Dread," your feature story on the need to set ground rules with application developers ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 5224):

I am an IT manager for a petrochemicals manufacturing company. Last year, my group could have gone through a situation similar to PacifiCare's PeopleSoft implementation. Our company had chosen to upgrade our SAP implementation to Version 4.6, which would require hundreds of PC upgrades. It was also not known how the new SAP client would interact with our many vertical-market applications.

Instead of taking the conventional upgrade route, we avoided those headaches by publishing the SAP client on a dedicated Citrix Metaframe server. It has proven to be a stable, reliable system for us. It has saved us tens of thousands of dollars in avoided hardware purchases and was one of the more enjoyable product rollouts we have done.

John Windsor  
Lake Charles, La.

Intranet Adviser . Daniel Blum

## IN REAL LIFE, SMART CARDS ARE GAINING ON PASSWORDS ALONE

**A**n early scene in the new movie "Swordfish" shows a hacker with a gun to his head, fingers flying fast and furious, cracking into a site seconds before his time limit expires. Later, I thought that if only the site in question had required smart card logon, the movie could have ended there and spared us another hour of unbelievable plot line and overdone special effects.

But like many sites, the fictional one in "Swordfish" relies on passwords, an increasingly frayed authentication solution. With password-cracking programs, dictionary attacks and ever-increasing computational power, it's gotten so the only "strong password" is a long gibberish character string you can't remember — but better not write down.

Smart cards and other access tokens rely on one-time-only passwords, challenge-response phrases or public-key security to dramatically increase authentication strength.

Each token adds another authentication factor by requiring that users possess the physical device, and most require that users remember a password. Smart cards are particularly interesting because they can

enable encryption and digital signatures in addition to authentication.

Two-factor authentication is almost always better than one-factor. Actual authentication strength depends just as much on authentication policy as it does on authentication mechanisms. Configure a system to require strong passwords, make users change them monthly and lock all accounts after three invalid access attempts, and you've got medium-strength authentication.

Using a smart card with strong management policies and strong passwords yields high-strength authentication. But use a smart card with weak passwords and leave the card lying around, and you're back to medium-strength at best.

Unfortunately, there's no free lunch. Strong password policies significantly increase help desk, training and administration costs, while smart cards generate substantial hardware and support costs. You have to pick the right point on the cost/risk spectrum for your company or application.

What about smart card support costs? On the bright



side, JavaCard technology, Windows XP and Windows .Net servers all do a pretty good job of integrating cards with operating systems and applications. Veteran security vendors are getting into the action. But smart card management remains challenging, requiring at least some support for complex public-key infrastructure

(PKI) and smart card lifecycle management, including card password/personal identification number reset, and data recovery.

But the water's definitely getting warmer. As you plan your hardware and software rollouts, consider at least prestaging card readers or other devices so you'll be ready for this technology. Also, study smart card and PKI options in your security architecture planning.

Now if only that also would make it possible to get better movies out of Hollywood.

*Blum is senior vice president and research director with The Burton Group, an integrated consulting, research and advisory service. He can be reached at dblum@tbg.com.*

Reality Check . Thomas Nolle

## WAITING FOR THE NEXT SHOE TO DROP

**W**ell, the stock market seems to have stabilized, and a lot of us are heaving a sigh of relief. Alan Greenspan does it again. Or maybe not. Right now, there are more than a hundred equipment and software vendors in danger of tanking in the next six months. Most of these are still in the venture financing stage, so their demise wouldn't affect the public markets, but this next round of problems could still spell trouble for us all.

In another development, about 20 new network players are now involved in lawsuits stemming from their IPOs. It seems that the stocks traded in the first weeks significantly above their supposed initial offering price, then tanked. People who got caught wonder if maybe, perhaps, there was some kind of overpromoting going on.

Just today, a big network company announced a larger-than-expected loss, and a zillion Wall Street analysts jumped in to downgrade the stock. One might wonder how they had missed the risk up to that point. After all, you don't need an analyst to read the newspapers to you.

Three unrelated events? Maybe I'm a conspiracy theorist, but I don't think so. I believe that our industry has completely lost touch with reality. I also think that Greenspan and the Feds aren't going to fix our problem.

Ten years ago, maybe even five years ago, any startup that said its business was going to sell software

and equipment to build carrier networks would have been laughed out of the market. Everybody knows these players don't buy from start-ups, or so the classic wisdom went. The "emerging" carriers, funded by the same people who funded the equipment vendors, were the target buyers of the hundred now-threatened network players I mentioned earlier. They had less discriminating taste, supposedly.

Well, maybe that's why they have been failing in droves. But it was the appetites of these emerging players that created the equipment market that resulted in a boom market for many of the network stocks, and then their bust, just as quickly. The hype cycle our industry is famous for made it all look real.

In any event, backers of these New Age equipment and software players have been driving their progeny into the arms of the emerging carriers, using board of director seats to influence policy. That was the quickest way to get what any venture capitalist wants — a quick exit at a high profit. In this process, they not only didn't develop a value proposition for the big incumbents (who, after all, were doing all the real buying in the carrier space for literally decades), they also actively avoided meeting technology requirements the incumbents would have imposed. When the emerging players ran out of capital, these joined-at-the-hip vendors found themselves with a product set there were no buyers for — not a good position in a market hungry for positive financial results, but one that could have been easily predicted.

If this were a fairy tale, the happy ending would be that the venture capital firms, seeing the error

of their ways, jumped in to help rehabilitate their fledgling vendors and vowed to walk the straight and narrow in the future. Wrong. Instead, the industry seems bent on repeating history. DSL local exchange carriers, which would have used DSL for high-speed access, have been discredited. The response has been to back metropolitan-area Ethernet players that use a faster and more expensive technology that, obviously, can serve only a smaller market. Yet somehow this is supposed to work when DSL didn't. And you know where the metropolitan carrier play has taken the equipment space — everybody who's anybody now wants to do access Ethernet switches or metropolitan fiber. Déjà vu all over again, as Yogi Berra said.

This industry is not going to emerge from its current Dark Ages by perpetuating the very sins that got it there in the first place. How often can a market sector like networking take the public on an investment ride in which the only winners are the ones that get out of the stock in days or hours? Let's face it, venture capital today isn't funding products, services, carriers or anything useful. It's funding exit strategies. We, the public, are what they're exiting into. One might well ask how, if the initial backers are taking their money and running, anyone buying in is likely to get a return. That's what Wall Street is asking. That's why a hundred companies are struggling.

What's your answer, readers?

*Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (856) 753-0004 or trolley@cimicorp.com.*



**N**etScreen's newest firewall and VPN appliance, the NetScreen-500, packs a performance wallop into a small package. With up to four Gigabit Ethernet or up to eight Fast Ethernet interfaces, this box can handle loads up to 720M bit/sec. The VPN performance is fast, with speeds up to 238M bit/sec. And with a list price starting at \$25,000, the NetScreen-500 matches that performance with an aggressive price.

The NetScreen-500 fits nicely between the NetScreen-100 and NetScreen-1000 firewalls. With few significant differences in software functionality across the entire NetScreen firewall/VPN appliance line, the NetScreen-500 is primarily a price/performance package. It is well positioned as a mainstream, enterprise-sized firewall for NetScreen fans that need more power than the NetScreen-100 can deliver.

A major new feature introduced with the NetScreen-500 is interface flexibility. The 2U-high chassis has four slots. Each one can take either a single Gigabit Ethernet connection or dual 10/100 Fast Ethernet connections. Because the Gigabit Ethernet ports are Gigabit Interface Card-based, you have the option of short-distance fiber, long-distance fiber, copper or even one of the proprietary long-distance GBIC connections.

In addition, the NetScreen-500 has a dedicated 10/100 Fast Ethernet port for management, as well as two 10/100 Fast Ethernet ports dedicated to high-availability synchronization. The high-availability ports let you run a pair of NetScreen-500s in a master/slave high-availability configuration. Although the firewall can have up to eight interfaces, the software to handle more than three (trusted, untrusted and demilitarized zone) won't be available until year-end. We tested the current release, Version 2.6.

A second new feature unfamiliar to users of the smaller NetScreen firewalls is virtual systems. Using 802.1Q virtual LAN (VLAN) tagging, the NetScreen-500 can simulate up to 25 separately managed firewalls. Although all the packets share the same physical firewall interface, combining the NetScreen-500 with a VLAN switch lets you assign individual VLANs to different address spaces and security zones. With the NetScreen-500, the virtual system feature makes one trusted physical interface into 25 virtual interfaces, each with their own IP addresses and subnet masks. Each virtual interface has its own management username and password, and its own firewall rule set.

For example, a large company

might use this feature to let different groups independently manage the firewall rules for their own servers.

The NetScreen-500's Web-based graphical user interface (GUI) and command-line interface will be familiar to anyone who has used any other NetScreen firewall before. However, the biggest weak spot is the Web-based interface. Serious die-hard security types won't be happy with the fuzzy "trust me" philosophy of the GUI, while anyone who has to manage more than a couple of dozen rules and system groups will find the Web interface difficult to handle.

NetScreen's Web interface continues to walk a fine line between ease-of-use and extreme flexibility. However, in the enterprise, most security managers will find the level of detail about right.

#### Performance

Firewall performance should be sufficient for most enterprise networks and many hosting centers. In our tests, with large packets (the easiest test), the NetScreen-500 screamed in at more than 720M bit/sec, even with 20,000 simultaneous sessions. But in a more typical Internet packet mix, we saw no loss of speeds from 100 to 150M bit/sec, depending on the number of sessions (between 20 and 20,000). Speed wasn't dependent on logging: We got almost identical answers if logging was turned up or off.

The NetScreen-500 also has the strength to set up and tear down those sessions. We could drive up to 13,000 TCP connections per second through the NetScreen-500, pushing it to 100,000 simultaneous open connections before tearing them down.

Combining throughput with session establishment will drop performance numbers, but the speed of the NetScreen-500 should be sufficient to handle a full-speed DS3 circuit — 45M bit/sec full duplex or 90M bit/sec total throughput. When we combined throughput and session establishment benchmarks to stress the firewall as much as possible, it still did quite well.

On the VPN side, the NetScreen-500 is a high-performance central site device in a hub-and-spoke site-to-site network. Although NetScreen didn't make any improvements in its remote access support, the site-to-site IP Security implementation is easy to configure and has an excellent price-performance. With large packets, we saw point-to-point encryption speeds of about 238M bit/sec. With a more typical Internet mix, the NetScreen-500 held down a respectable 100M bit/sec IPSec encryption speed.

#### Final analysis

Is the NetScreen-500 your next fire-

# Big firewall in a small package

**NetScreen-500 firewall/VPN appliance packs a price/performance punch.**

BY JOEL SNYDER,  
NETWORK WORLD GLOBAL TEST ALLIANCE

## NetResults

### NetScreen-500

**SCORE:** 4.15 **COMPANY:** NetScreen, (403) 730-6000, [www.netscreen.com](http://www.netscreen.com) **PRICE:** \$25,000 (base system; \$35,000 as tested). **PROS:** High performance in a small package; easy to configure; multiple virtual systems; built-in encryption acceleration.

**CONS:** GUI may be too simple for enterprise managers; only three interfaces in current software.



	Performance	Features	Management	Ease of use	Installation	Total
	30%	25%	25%	10%	10%	score
NetScreen-500	5	4	3	5	4	4.15

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. Scoring key: 5: Exceptional showing in this category. Defines the standard of excellence; 4: Very good showing. Although there may be room for improvement, this product was much better than average; 3: Average showing in this category. Product was neither especially good nor exceptionally bad; 2: Below average. Lacked some features or lower performance than other products, or than was expected; 1: Considerably subpar, or lacking features being reviewed.

### Performance benchmarks

#### Description

	Performance (less than 0.1% loss)
Throughput, 1,280 octet packet size, 20 streams	720M bit/sec
Throughput, 1,280 octet packet size, 2,000 streams	720M bit/sec
Throughput, 1,280 octet packet size, 20,000 streams	720M bit/sec
Throughput, Internet packet size mix, 20 streams	150M bit/sec
Throughput, Internet packet size mix, 2,000 streams	140M bit/sec
Throughput, Internet packet size mix, 20,000 streams	100M bit/sec
Connection setup/teardown, 100,000 connections	13,000 connections/sec
Combination setup and throughput, Internet packet size mix, 20 streams	150M bit/sec
Combination setup and throughput, Internet packet size mix, 2,000 streams	120M bit/sec
Combination setup and throughput, Internet packet size mix, 20,000 streams	60M bit/sec
VPN IPSec Triple-DES Encryption, 1,440 octet packets	238M bit/sec
VPN IPSec Triple-DES Encryption, Internet packet size mix	100M bit/sec

wall? If you need the speed, you've only got a few choices. Cisco's PIX 535 offers much higher firewall performance with lower VPN speeds at a slightly higher price, but Cisco's command line interface is a far cry from NetScreen's Web GUI. The NetScreen-500 isn't right to protect a hosting center with multiple OC-3 lines, but its virtual system capability does make it an intriguing option. The NetScreen-500 can replace literally two dozen other firewalls, with a per-firewall price that lets you assign a dif-

## How we did it

Testing gigabit firewalls isn't easy, so we turned to Spirent Communications for a SmartBits 2000 with 20 Fast Ethernet ports. We used Extreme Networks' Summit 48 switches to aggregate 10 ports of Fast Ethernet into each Gigabit port on the NetScreen-500. From there, we used Spirent's SmartFlow and SmartTCP applications to generate User Datagram Protocol (UDP) streams and TCP connections. For our "Internet packet size mix" profile, we used data collected from an Internet backbone to build a profile of approximately 50% small packets (96 octets or less), 10% large packets (1,518 octets, the Ethernet maximum transmission unit), 20% 576 octets (a common WAN maximum transmission unit), and 20% assorted between 192 and 1,024 octets. We set up 20,2,000 and then 20,000 sessions with Spirent's SmartFlow through the NetScreen-500, using UDP as the transport protocol and measured loss rates. When loss went above 0.1%, we decided that the NetScreen had run out of steam and took the next lower bandwidth measure as total throughput capability. We tested throughput in two ways. For the statistics that are reported as "throughput," we set up a "pretest" that established the sessions before starting high load. For the "combination" tests, we cleared out all sessions and made the NetScreen-500 not only absorb a high data transfer load but also a high session establishment load. We also used Spirent's SmartTCP software to test connection establishment and tear-down rates using TCP. We increased the rate of connection set up and tear down until we had a loss rate above 0.1%.

For VPN testing, we used a combination of eight Nokia CC2500 VPN gateways and Alcatel 7137 VPN gateways, with a total combined throughput of 520M bit/sec. These systems established a small number of security associations to encrypt/decrypt IP Security Triple-DES traffic to the NetScreen-500. We used the same SmartBits setup as in the previous test, but with 16 Fast Ethernet ports instead of 20.

ferent "virtual" firewall to every application server.

The NetScreen-500's biggest weak spot is the Web GUI. On the other hand, the NetScreen-500's bridge-mode, in which the firewall sits invisibly between the trusted and untrusted networks, gives it unparalleled flexibility. You can

slip a firewall in and no one will notice — except the bad guys.

NetScreen's breadth of product line should also short-list them for any firewall evaluation. The ability to scale from the small office/home office-sized NetScreen-5 up to the NetScreen-1000 makes them an attractive supplier: buy

a unit, and if you like it, you can get more in many sizes.

*Snyder is a senior partner at Opus One, in Tucson, Ariz., specializing in messaging and security products. He can be reached at joel.snyder@opus1.com.*

# LINUXWORLD CONFERENCE & EXPO

## Where Open Source Comes of Age

Don't miss the world's leading Linux event focusing on Linux and Open Source solutions. Whether you're looking for a better way to manage and scale your network, or a more cost-effective way to run your company, LinuxWorld Conference & Expo can show you how. Be there to network, learn and see where Open Source comes of age.

- Hear **Keynotes** from leading Linux and Open Source visionaries
  - **Shane Robison**, Sr. Vice President & CTO, Compaq Computer Corporation
  - **Larry Lessig**, Law Professor, Stanford Law School
  - **Matthew Szulik**, President & CEO, Red Hat
- Attend Feature Presentations such as "**Golden Penguin Bowl**" hosted by Nicholas Petreley, "**The State of Open Source**" featuring Linus Torvalds, hosted by Larry Augustin, CEO, VA Linux Systems, and "**Best Practices with Linux for e-Business Infrastructure**" moderated by Ross Mauri, Vice President, IBM and President, OSDN Lab.
- **Experience** an interactive exhibit floor that will showcase the hottest Linux products, services, applications and embedded systems from over 250 leading hardware and software vendors.
- **NEW! The Worldwide Developer Conference at LinuxWorld** geared exclusively to application developers, along with the most comprehensive and very best Linux educational training available in the world.

**Conferences**  
August 26-30, 2001

**Expo**  
August 28-30, 2001

**Moscone  
Convention  
Center**  
San Francisco, CA

Owned & Managed By:  
**IDG**  
WORLD EXPO

© 2001 IDG World Expo.  
All rights reserved. LinuxWorld is a trademark of International Data Group, Inc. All other marks contained herein are the property of their respective owners.

Cornerstone Sponsor	Platinum Sponsors					Certification Sponsor
VA LINUX SYSTEMS	Agenda	COMPAQ	ca	GreatBridge	hp	IBM

# In the networking race, the faster path wins.

**hp** procurve switches —  
higher performance, a lower  
price, and **simply faster**

Whether you're designing, building, or expanding  
your network, HP procurve switches provide the  
faster path to speed and performance.

You'll be the first across the finish line with HP's  
fast path technology — the "switch on a chip"  
architecture that provides high performance at  
an incredibly low price!

- the highest port density in a mini-chassis per RU
- lifetime warranty\*
- free software upgrades



**hp** procurve 4108gl  
leaves the competition in the dust

Win a Sony® PlayStation®2  
Sign up for a **free network design**



from HP and  
enter to win a  
Sony PlayStation2!

[www.hp.com/info/hpprocurve5](http://www.hp.com/info/hpprocurve5)  
or call 1-800-477-6111 ext: 45761



invent



According to market research firm IDC, 65% of the 138.9 million computers purchased this year will be purchased for business use. A large percentage of those computers will replace existing models. Some IT organizations leave it up to users to do things such as copy all their important files to a server and save copies of their Internet bookmarks. For many users that approach is not practical and results in a significant loss of productivity. We are all creatures of habit, and we typically have our computers set up just the way we like them — with desktop shortcuts and specific application settings. Getting a new computer setup to match an old one could be a significant task without the help of an automated tool.

We recently tested five personality transfer products to see which offer the best overall tool kit for getting the job done. We tested Altiris PC Transplant Pro 3.0, Miramar Systems Desktop DNA 2.5, PowerQuest Migration Manager 2.1, Symantec Ghost 7.0 and Tranxition Personality Transport Professional (PT Pro) 2.1. While some of these products offered additional functionality, we limited our tests to the personality transfer arena. The Symantec Ghost product was the only one that did not offer the migration feature as a separate product. Its "move user"

## NetResults

### Altiris PC Transplant Pro 3.0

**SCORE:** 3.53 **COMPANY:** Altiris, (801) 226-8500, [www.altiris.com](http://www.altiris.com) **PRICE:** 10 to 99 nodes \$28 per node. **PROS:** Best all-around product; lots of features and integration with the company's other products. **CONS:** Doesn't have an administrator's console for migration purposes.

### Symantec Ghost 7.0

**SCORE:** 3.03 **COMPANY:** Symantec, (800) 568-9501, [www.symantec.com](http://www.symantec.com) **PRICE:** 50 to 99 seats \$16.13 per seat. **PROS:** Good use of administrator's console with the ability to segment specific tasks by groups. **CONS:** Full control of client machines requires a separate partition on the local hard disk; no application migration support.

### Miramar Desktop DNA 2.5

**SCORE:** 3.25 **COMPANY:** Miramar Systems, (800) 862-2526, [www.miramar.com](http://www.miramar.com) **PRICE:** 100 nodes \$30 per node. **PROS:** Most descriptive use of dialogs that detailed each step of the migration process. **CONS:** Requires administrator's rights to run under Windows NT/2000.

### PowerQuest Migration Manager 2.1

**SCORE:** 2.15 **COMPANY:** PowerQuest, (800) 379-2566, [www.powerquest.com](http://www.powerquest.com) **PRICE:** 10 nodes \$18 per node. **PROS:** Good integration with company's Drive Image Pro product. **CONS:** Lots of manual editing required to accomplish primary migration task.

# In need of a personality transplant

**Altiris PC Transplant Pro shines the brightest in our personality transfer utility showdown.**

BY PAUL FERRILL

function was tightly integrated with the rest of the Ghost package.

We deemed PC Transplant Pro from Altiris to be the best overall choice for

personality transfer. PC Transplant Pro did a thorough job of migrating the personality of our machines, and had the most options and features of all

the products we tested. Altiris also is the only company in the group to offer a comprehensive inventory solution that augments the migration process. However, it wasn't quite easy enough to use or administer to win our Blue Ribbon Award. When you are migrating hundreds of PCs, ease of use and administration are the tails that wag the dog. Miramar and Tranxition focus exclusively on the migration task, and both do the job well, with some caveats.

Three of the vendors — Altiris, PowerQuest and Symantec — offer disk-imaging utilities that merge exceptionally well with their personality transfer products. Altiris also offers a suite of tools under the Altiris eXpress title that help you assess the state of hardware prior to performing an in-place operating system upgrade. It makes sense to couple the disk imaging capability with the personality transfer functions to make the process as simple as possible.

The basic problem of migrating a computer's "personality" can manifest itself in several scenarios. First there's the new computer problem, where IT replaces the old computer with a shiny new model, complete with a new operating system and applications. Another scenario involves an in-place upgrade of the operating system. While there are other variations on the basic theme, these two pretty much cover the types of actions that must take place.

In the new computer case, it is common practice for the IT department to totally configure the machine with standard applications prior to delivering it to the user. That would also be the best time to transfer the user's personality. Numerous studies have shown that the support costs associated with an IT staff person visiting a user's desk can be significant. To minimize those costs, it makes sense to gather the personality information over the network so it can be applied prior to delivery.

The in-place upgrade presents another set of problems. A comprehensive inventory of existing systems is an essential step for any company considering a migration to a Windows 2000 operating system environment. Minimum memory and processor requirements must be met to ensure a successful operating system migration. Of the five products we tested, only PC Transplant Pro offered a product bundle that included an inventory component to address those requirements. If you're considering this type of upgrade, and you don't own a tool for hardware and software inventory, consider the Altiris product or some other third-party inventory device.

We focused on the transfer of files

\*Note: Only the personality migration functions of Ghost were tested for this review.

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. Scoring key: 5: Exceptional showing in this category. Defines the standard of excellence; 4: Very good showing. Although there may be room for improvement, this product was much better than average; 3: Average showing in this category. Product was neither especially good nor exceptionally bad; 2: Below average. Lacked some features or lower performance than other products, or than was expected; 1: Considerably subpar, or lacking features being reviewed

	Administration 30%	Ease of use 25%	Performance 25%	Documentation 10%	Installation 10%	Total score
PC Transplant	3.5	3.5	4	3	3	3.53
Desktop DNA	3	3.5	3.5	3	3	3.25
Personality Transport Pro	3	3.5	3.5	3	3	3.25
Ghost 7.0*	4	3.5	2	2	2.5	3.03
Migration Manager	2	2	2	3	2.5	2.15

and settings between two computers. We originally intended to also test an "in-place" migration. After discussions with several of the vendors, we decided this method was just an extension of the machine-to-machine transfer in that most organizations that do this type of upgrade will wipe the hard drive clean and load a fresh image of the new operating system. The process of moving the personality is then essentially the same because you collect the personality information, save it to a network share and reapply the personality to the new operating system. The difference between the two is that some type of imaging software is required to load a copy of the new operating system.

All the programs we tested take slightly different approaches to the problem. Several, including Desktop DNA, let you migrate entire applications from one system to the next. You might not want to do that, especially when you're upgrading from an older version of Windows to something like Win 2000 or XP. Other products, such as PC Transplant Pro, won't even let you migrate an entire application. For commercial off-the-shelf software that probably makes sense, but for the large number of business users who want their corporate applications to follow them to their new machine, it might not.

The bottom line is to know your environment and have a clear understanding of what your requirements are. If you're strictly trying to help users through a new machine delivery process, then you'll be fine with most of the packages in this story. If you have lots of legacy code that also needs to move, take a closer look at those applications to see if they will work in the new environment and transfer without a reinstall.

#### Administration

One of the biggest challenges facing most IT staffs is how to automate any task that involves large numbers of users. In our case, we imagined using 1,000 desktop computers for a hypothetical migration effort. We then set out to evaluate each product as to how it could make an administrator's job easier.

Another pertinent issue is how to handle multiple users on the same computer. PC Transplant Pro offered the most options for handling computers with multiple accounts, including the ability to grab and migrate all users, selected users or a single user. Only users with administrator rights can migrate multiple users. On the target computer,

PC Transplant Pro checks to see if the user executing the package has administrator rights and, if not, will only migrate that user's settings. Desktop DNA also supports multiple user migration and will allow an administrator to perform a migration without the requirement that the user log on.

In some cases you might want to map files from one location (for example the "My Documents" folder) to a different location on the new machine. All five products let you move files from one location to another as a part of the migration. Several let us filter files that get migrated based on some specified criteria. Desktop DNA uses a search mechanism and rules to find files that should be migrated to the new machine. Rules include application type, file extension, date and size. PC Transplant Pro and PT Pro have a similar file rule capability, allowing you to include or exclude files you wish to migrate.

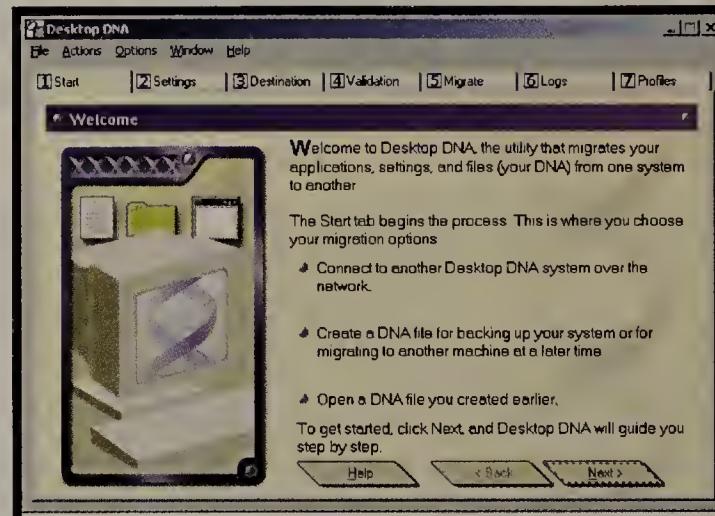
We liked the way Symantec Ghost Enterprise Console uses the concept of "machine groups" to let you associate tasks such as gathering or deploying captured personalities to a specific group of users. Placing an individual computer into a "machine group" made it possible to gather or distribute user information in different ways, depending on the group.

You could accomplish the same thing with most of the other products, but none of them provided the same type of graphical grouping capability. The migration process is then scheduled as a task to run at a later date.

Altiris offers an additional tool called RapiDeploy that uses a small

client program to enable image distribution from a server to multiple clients via IP multicasting. The RapiDeploy Client program loads as a service under Win 2000 and NT. In contrast to the other products, this same client can be used to execute migration without the need to have administrator privileges.

The rest of the products, Desktop DNA, Migration Manager and PT Pro



Miramar's Desktop DNA has a very informative user interface with detailed descriptions of each step in the process.

rely on a command line method to execute their programs. They leave it up to administrators to decide how the process will take place, although recommended methods include using a management program such as Microsoft's System Management Server, through a logon script or by e-mailing a link or shortcut to each user. The logon script and e-mail method points to a share on a server where the appropriate program and template files have been stored.

We liked how Desktop DNA gave us a high level of control over the logs it creates throughout the migration process. The error and exception log can be set to four levels of detail, from general to very detailed, to help debug a misbehaving script file. They also provide additional network and debug logs that can be captured and sent to

the vendor for analysis of any problem. Additional settings let you specify what level of compression to use in the DNA file, and what to do when files are found on the target machine that match those about to be written from the personality file.

Personality Transport Pro provides a profile-inventory management feature that eases the process of keeping track of different user profiles. We found the examples in its online help for adding the appropriate commands to logon scripts for NT and NetWare to be the most useful of all the products.

Migration Manager was the only product that didn't provide

some sort of management console. PowerQuest says it was about to beta-test a new tool that would address a number of the deficiencies of its Migration Manager product, but it was not available in time for our testing.

#### Ease of use

Every product we tested required some sort of template file to specify what settings and applications to

migrate. Each uses a slightly different method of creating these template files — from manual editing to an automated capture process. All the products we tested, with the exception of Migration Manager, have some sort of graphical user interface for building a template to capture the personality information.

PC Transplant Pro provided the highest number of wizards to help lead you through the steps required to move a personality. That can be a blessing or a curse, depending on your perspective. The wizards are helpful the first time through, but after that, they just get in the way. However, more advanced users can use the command line options without using a wizard.

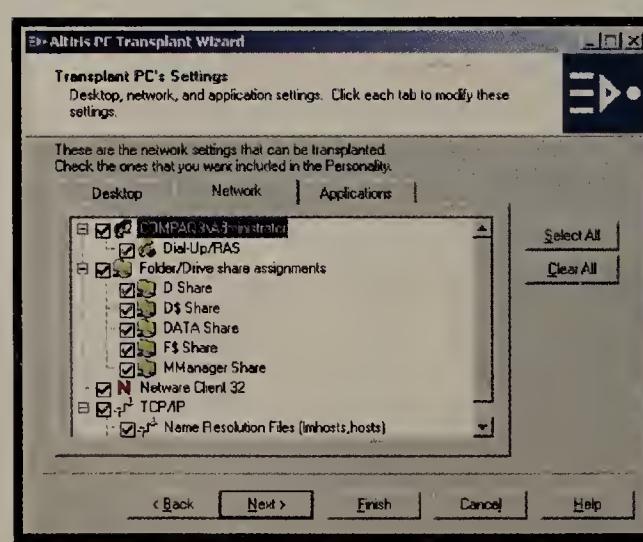
The Desktop DNA console was the most descriptive, telling us exactly what was happening at each step. It also provided a validation step that checked for conflicts or inconsistencies that might cause the migration to fail before the job was finished.

Migration Manager required the greatest amount of manual editing and configuration. To get the program to function correctly we had to edit an INI file to specify exactly what it should capture for you.

Several of the products offered tools for companies with custom software and associated custom settings that need to be moved. The Tranxition Migration Studio provides what it calls "deep migration script support" to let you gather the key information that identifies an individual user to a mission-critical application. Once the script has been created and debugged it can be dropped into PT Pro for use in migrating user information.

Desktop DNA had a utility called "muscle migration." This tool performed essentially the same task as the Tranxition Migration Studio; it searched through the registry looking for applications that it might migrate. It then proceeded to migrate either the entire application or only the settings, depending on how you configured it.

PC Transplant Pro included a tool called A2iBuilder, which stands for Application to Information Builder,



PC Transplant Pro from Altiris will migrate all the current network settings, including drive mappings and network printers.

and is essentially all the information required to migrate an application. This utility looks for unrecognized applications and gives you the option of building an "A2i" file that can be used to migrate user settings.

### Performance

To measure the performance of each product, we executed the transfer process with special attention being paid to the steps and time required to complete the entire process. We focused on how an administrator would automate the task and not have to visit the user's work area during the migration. In our scenario, we assumed a new computer was replacing an existing one, meaning someone had to deliver the new computer to the user.

The final migration could either be done by the user or by the PC technician prior to delivery.

The amount of time required to perform the migration will vary depending on the number of files and how many files your machine has that need to be migrated. We configured our transfer rules to copy all files in the My Documents folder and every Microsoft Office file. With approximately 50M bytes of file data to copy out of a total of 2G bytes of data, our personality gathering process averaged around 10 minutes. All of the products took about the same amount of time to collect and build the personality transfer package.

Desktop DNA offers the option of performing the migration in real time over the network. In this scenario you run the program on both machines and designate one computer as the source and the other as the target. The migration takes place over the wire based on a template file that you specify. The advantage to this process is

you don't have to keep an image of the personality on a server; you just move it from one computer to the next. One disadvantage is in the network settings, as you typically want to duplicate all the settings from the old machine onto the new one, which could cause conflicts on your network.

We liked the result of the Altiris extraction process. Once you accomplished the personality capture from the initial system, the Altiris software builds an executable file (.exe) that a user simply has to run once to transfer all the settings. Most of the other products required a client program for the capture and delivery of the personality package.

Desktop DNA uses individual script files for each application to properly migrate the user settings. The product comes with a large group of scripts covering the most popular applications. Miramar also posts new and updated scripts on its Web site. When you run Desktop DNA on the source machine, it identifies an initial set of scripts to run based on the applications it finds on that machine. You can also edit the template file to add or delete scripts if necessary.

Ghost was the only product that didn't attempt to migrate application settings. It strictly copies files and data along with the standard Windows settings. Ghost lets you specify individual registry entries, keys or hives.

In theory then, you could migrate application settings stored in the registry, but the process is not very straightforward and is potentially

dangerous.

Migration Manager at least addresses application migration in its documentation, but it doesn't offer much more help than Ghost. To migrate applications you must edit a text file of commands that specify what files and registry entries to migrate. It offers suggestions on migrating Microsoft Outlook and

how PT Pro does its job.

Desktop DNA has a help button on each page that brings up information pertinent to the operation you are about to perform. That can come in handy when you need to know how to select a particular setting or option along the way. There's also a lot of descriptive text on each page that helps keep you on track for each task.

### Installation and configuration

We paid particular attention to each install process, looking for any significant amount of configuration or manual intervention that was required. We also evaluated the need to load software on the client machines.

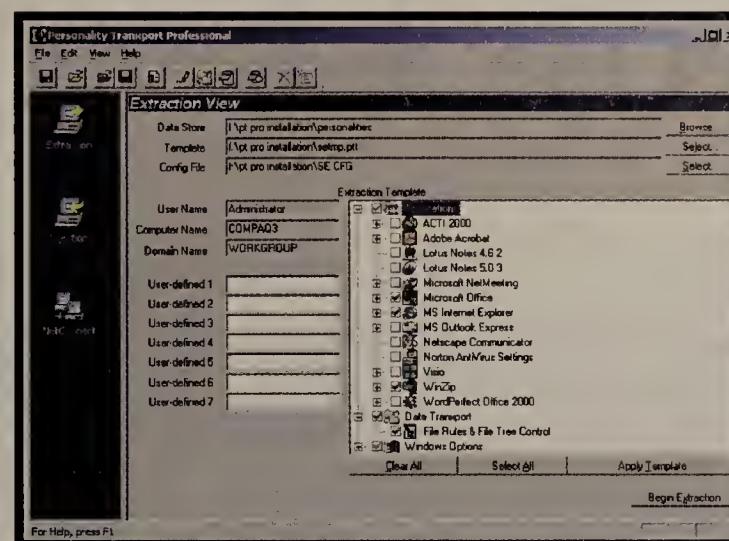
For the most part, these programs had two pieces of software that had to be loaded — one for the server and one for the client. The client software could be kept on the server for all the programs with the exception of

Ghost, which requires the client driver to be installed locally. Running the required software from the server means you could send a link to a user via e-mail to have the PC launch the personality capture process.

Most all of the products tested provided an autorun CD that launched their installation program once you loaded the CD-ROM into the drive. The Symantec Ghost product stood out from the other products when it came to the installation process. There weren't a lot of questions that the user had to answer and you were on your way.

Choosing the right migration tool depends a lot on the job. Selecting the right tool also depends a lot on the job you're trying to accomplish. If your company is doing an in-place migration to a new operating system, you'll definitely want to look at the Altiris eXpress Migration Toolkit. It has everything you need to take inventory and then totally automate the upgrade process. If you need the ability to distribute standard disk images with operating system and applications in addition to migrating, you will want to look at the Altiris and Symantec products. If you only want to do basic personality migrations the Miramar and Tranxition products both offer unique capabilities.

*Ferrill is a freelance writer in Lancaster, Calif. He's been writing about computers and networks for more than 15 years. He can be reached at paul.ferrill@verizon.net.*



The Personality Transport Professional main screen uses a Windows Explorer interface, allowing you to visually pick and choose the items you want migrated.

Lotus Notes e-mail settings and how to accomplish the task with their command files.

The ability to undo a migration might come in handy depending on the results. All of the products but Migration Manager offered some sort of undo capability. In the new machine test, a failed migration would result in reloading the operating system image and any applications, and then reapplying the migration.

### Documentation

Only two of the products we tested, PowerQuest Migration Manager and Symantec Ghost, came with printed documentation. That said, neither printed manual provided a voluminous amount of information. The section on moving or migrating users in the Ghost manual covers parts of five pages. The PowerQuest Migration Manager User Guide includes 60 pages of information and explanation of how to perform the proper tasks.

Altiris had the best electronic documentation of the bunch, using fully indexed and searchable Adobe Acrobat files. Symantec's documentation was more focused on the imaging capabilities of Ghost than anything else. The PT Pro program used the older-style Windows help files with a fair amount of indexing. The PT Pro Deployment Guide provided a good introduction to the concepts and actions required to successfully migrate a computer's personality. The Adobe Acrobat file includes graphics and illustrations that help to describe

## How we did it

We installed the products on identical Compaq iPAQ 733-MHz workstations connected to a network with a single Windows 2000 Server running on a Compaq ProLiant 5500R with dual 550 Xeon processors and 512M bytes of memory. All personality packages were saved to the server for access across the network.

To measure the difficulty and performance of the personality transfer process, we looked at moving a user from Windows 98 on one computer to Windows 2000 Professional on another. For the machine-to-machine transfer, the Windows 98 machine had Office 97 installed and approximately 30M bytes of .doc files in vari-

ous directories. The Win 2000 computer had a fresh install of the operating system and Office 2000.

In the ease-of-use area, we looked at each product to see how automated the process of making the transfer was and how the product makes the task easier. We paid particular attention to the task of performing the upgrade under remote control and deducted points if the job could not be done without visiting the workstation.

To measure the administration functions, we looked at features a network administrator would use, such as customization scripting, unique parameter generation (such as network name) and file-transfer rules.



# Management Strategies

**Career Development, Project Management, Business Justification**

## Making IT accountable

**Internal service-level agreements stipulate your obligations to corporate users.**

BY JERRI L. LEDFORD

**S**ervice-level agreements are a requirement for relationships with service providers. These documents outline expected service levels, metrics for those levels, and penalties in the event that service levels aren't met. In short, SLAs make the relationship work.

Wouldn't it seem that the same would hold true for making the relationship between internal departments and the IT department smoother? Internal SLAs require the same legwork in determining what service requirements to measure and how. Still, many businesses are missing the advantages of internal SLAs.

Companies that don't use internal SLAs leave a gap between their business units and IT departments, says Jim Metzler, vice president of Ashton Metzler and Associates in Newton, Mass. Conversely, an internal SLA "puts the responsibility where it belongs," he says.

PHH Arval, a global provider of fleet services in Hunt Valley, Md., knows firsthand the value of an internal SLA. Tim Talbot, vice president of IT services for PHH, says his department triggered the implementation of the internal SLA. "Our view was that we needed to be like any professional outsourced provider."

PHH started small, including only the most critical applications. From there, the SLA became more and more specific. "A lot of outsourcers don't get that granular," Talbot says.

Letting IT departments define and adhere to internal SLAs also helps other departments see their requirements from a cost vs. benefits perspective.

"An internal SLA is not a 30-day wonder cure," says Peter Brown, director of global communications for PricewaterhouseCoopers in New York. "It's more a meeting of the minds."

Brown recommends that representatives from each side of an SLA get together to discuss the particulars of the document. "Not formalized teams," he says, but representatives who can agree on what to include in the SLA.

### The seven-step SLA

Internal service-level agreements are similar to external SLAs, although the main differentiator is the definition of the user. For an internal SLA, the user is another department within the same company. Here's how to create an internal SLA:

- Define the business need for each service that will be managed.
- Assess technologies and capabilities in that department.
- Negotiate acceptable service levels.
- Document service-level expectations in clear, understandable language.
- Invest in monitoring tools.
- Tie results to rewards and penalties.
- Review established SLAs every six to 12 months.

He adds that internal SLAs are expressed in more common language than the agreements that typically are crafted between an enterprise and an outsourcer. "Ultimately, the internal SLA is a meeting of the minds as to what service is and what levels are possible to meet," he says. "A large piece of that is education and expectation setting."

For example, a marketing department may require 99.999% uptime. IT can promise to provide that if the marketing department is willing to pay for the additional redundancy that is necessary to make it happen. What often happens is that the marketing department sees how costly these demands are, then lower, but equally acceptable expectations are defined.

### Start small and go from there

When you develop an internal SLA, Metzler recommends starting with one or two critical metrics and building from there. What's more, put the correct monitoring system in place to ensure you hit performance targets.

"As IT professionals, we love to go out and buy



tools, and bring them home," Metzler says. "But don't get mesmerized by the selection of technologies." Choose monitoring tools that will meet your needs and be scalable enough to expand as you increase the metrics in the future.

One essential measurement that Metzler says every internal SLA should include is the unit-cost metric. This measurement helps define the cost of IT services to each internal client. A good goal is to reduce that cost from year to year.

To make the prospect of implementing an internal SLA more appealing, PHH built rewards into the achievement of service levels. Talbot says that as part of the management-incentive program, service-level commitments and achievements are monitored throughout the year.

If IT consistently meets the internal SLA during the year, IT personnel get larger bonuses. The opposite is also true. If IT doesn't meet the promised level of service, the department that suffers gets a credit for all or a portion of its IT services. This, in turn, cuts into the IT department's budget and ultimately comes out of the manager's yearly bonus.

"People certainly are motivated by their bonuses," Metzler says. "The stumbling block is that I want to write an internal SLA, but that's risky because then I am accountable."

To combat the fear of accountability, Metzler recommends piloting an internal SLA for six to nine months before publicly announcing it. This lets you learn what works and what doesn't before the rest of the company is watching.

As he points out, you're already being held accountable for the network. Why not put it in writing and make it work for everyone?

*Ledford is a freelance writer in Nashville, Tenn. She can be reached at [Jerri.Ledford@home.com](mailto:Jerri.Ledford@home.com).*

[www.nwfusion.com](http://www.nwfusion.com)

## SLA STRATEGY

**Step by step: Guide to creating internal SLAs.**

**Streaming media: MetaGroup explains service-level management.**

**Sign up: Free newsletter on network/systems management.**

**DocFinder** 5226

find it online

# Remote Network Management Solutions

## Access Your Network Equipment From Anywhere!

When it comes to Remote Site Management, no one offers more choices to remotely access multiple console ports and/or reboot power than Western Telematic. Our Remote Management Hardware offers the design flexibility you need to mix and match equipment for small or large scale remote management strategies. As the pioneer and leader in Remote Site Management, WTI products are now installed in thousands of network sites world wide. Our customers know they can depend on our superior quality, reliability, and delivery for their mission-critical operations.

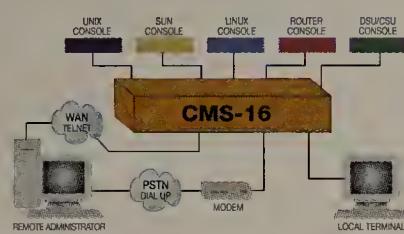
### Telnet and Dial-Up Console/AUX Port Switch

Cost Effective Terminal Server Alternative



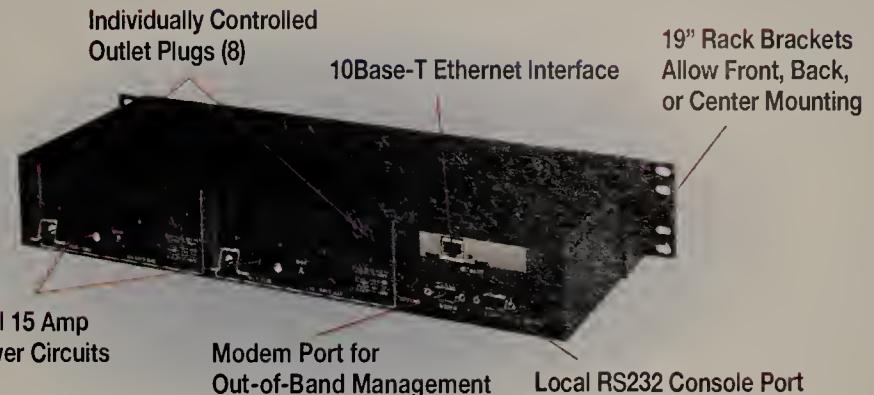
#### Console Management Switch (CMS)

- 8 or 16 RS232 DB-9 Serial Ports
- Simultaneous Telnet Sessions
- Modem Auto-Setup Command Strings (User Definable)
- IP Security Features
- Non-Connect Port Buffering



### Telnet and Dial-Up Network Power Switch

Reboot Locked-up Equipment

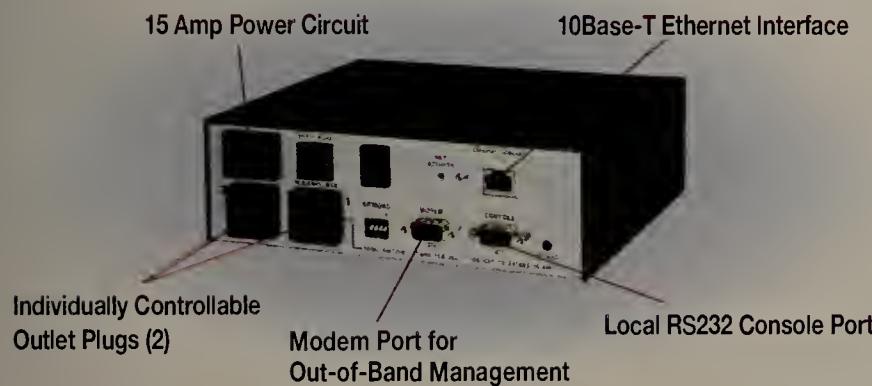


#### Network Power Switch (NPS)

- 8 Individual Outlets
- On/Off/Reboot Switching
- Integral 10Base-T Interface
- Co-Location Features
- Outlet-Specific Password Security
- Network Security Features
- 115-VAC (230-VAC available)
- Power-Up Sequencing

### Telnet and Dial-Up AC Power Switch

Economical

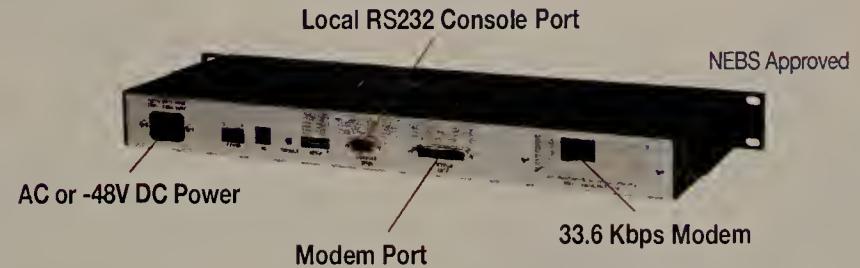


#### Telnet Power Switch (TPS)

- 2 Individual Outlets
- On/Off/Reboot Switching
- Outlet-Specific Password Security
- Network Security Features
- Manual On/Off Buttons
- Switches 15-Amp Load

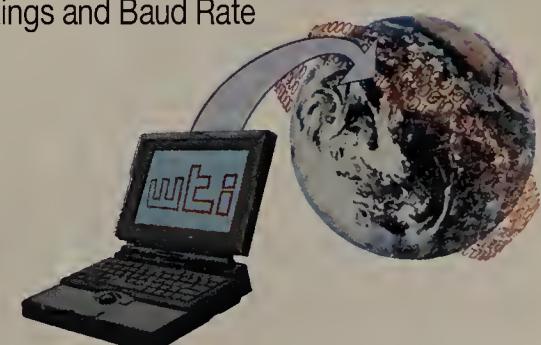
### Secure Modem for Remote Dial-Up Management

Dial-up Access to Equipment Bays



#### Secure Rack Modem (SRM)

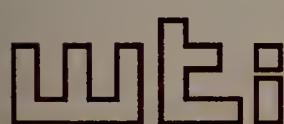
- Up to 100 Individual Passwords
- Audit Trail Log With Time/Date Stamp
- Powers up to Specified Answer Rings and Baud Rate
- Remotely Configurable
- AC and -48V DC Power Options
- Standard "AT" 33.6 Kbps Modem



Visit Our Website For The Complete NetReach™ Product Line

[www.wti.com](http://www.wti.com)

(800) 854-7226



# ENCLOSURES & RACKS

The premiere designer and manufacturer of modular ergonomic computer support furniture, enclosures & cabinets.

Racking Systems • Enclosures • 19" Rackmount • Relay Racks • Personal Workstations • KVM

2-61 Borden Ave. L.I.C. NY 11101

[www.hergo.com](http://www.hergo.com)

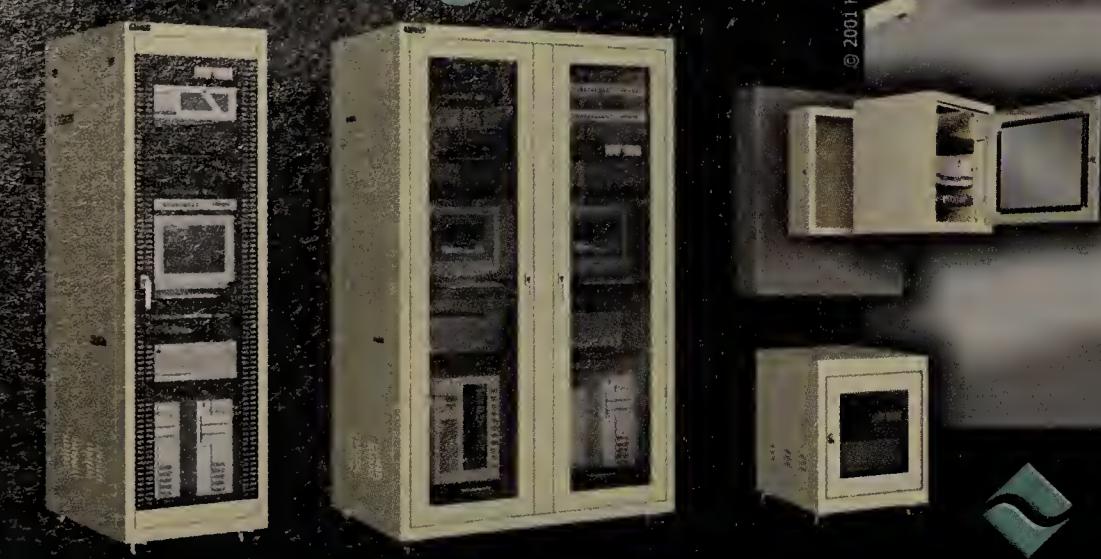
© 2001 Hergo Ergonomic Support Systems, Inc. Actual products may vary from illustrations.



Fax: 888.410.0671

 hergo

toll-free  
**888.222.7270**



**NTI**

Seeking Solutions...NTI Has The Answers!

## MULTI-PLATFORM SERVER CONTROL IS EASY!

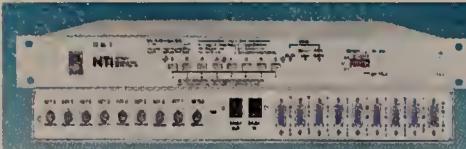


Control up to 128 computers with one keyboard, monitor and mouse.

- NEW - Up to 8 ports in 1 rack unit rackmount case!
- Available with 2, 4, 8, 12, 16, 24 or 32 ports.
- Dedicated internal microprocessors that emulate the keyboard and mouse presence to each attached computer so all computers boot error-free 100% of the time.
- Crisp and clear 1900x1200 resolution.

See Us At  
**NETWORLD + INTEROP**  
Booth #237

"I want flexible control without spending a fortune!"



**ST-8U-R**  
**UNIVERSAL**  
**SWITCH**

1275 Danner Drive • Aurora, OH 44202  
330-562-7070 • FAX: 330-562-1999

**PLEASE MENTION CODE #NW07U**  
**RECEIVE 10% OFF YOUR NEXT ORDER!**

BUY ONLINE at [www.nti1.com/sn](http://www.nti1.com/sn)  
800-742-8324 Email: [sales@nti1.com](mailto:sales@nti1.com)

Sentry : PowerTower

How do you reboot 16 equipment units...



using Zero U of rack space?

 **Sentry POWER TOWER** : Your Zero U Reboot Solution



A1  
B1

16 remotely addressable power outlets — The highest density available of any Remote Power Management vertical strip. 30-amp power input feed distributed across 16 outlets. Mounts vertically in your equipment rack or cabinet and requires Zero U of rack space.

Load Sense provides real-time current monitoring in the remote screen interface and through a built-in LED display for on-site measurement.

Power-up sequencing of all 16 outlets prevents an in-rush current overload.

Telnet, SNMP, Modem or RS-232 Interfaces for easy, practical and secure power management of remote internetworking equipment.



Install the new Sentry Power Tower in your data center, NOC or co-lo facility and gain the advantage of remotely rebooting up to 16 of your equipment units — without occupying any space in your rack or enclosed cabinet.

Try the New Sentry Power Tower in your rack or cabinet and realize the benefits of Intelligent Power Distribution and Remote Power Management.

See our complete product line at [www.servertech.com](http://www.servertech.com) or call 800.835.1515 or 775.284.3000

Another great product from  
**Server Technology, Inc.** 

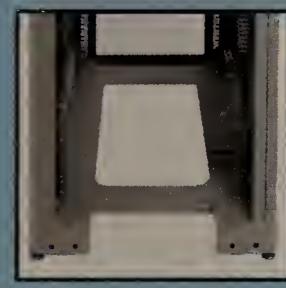
© 2001 Server Technology, Inc. Sentry is a trademark of Server Technology, Inc.

# Every Feature You Could Possibly Need. (And Some You May Never Have Imagined.)

Vented top panel incorporates dual 2.5" x 6" cable access openings.



Innovative cable entry design at the bottom of the cabinet provides users with flexibility and unequaled wire management access.



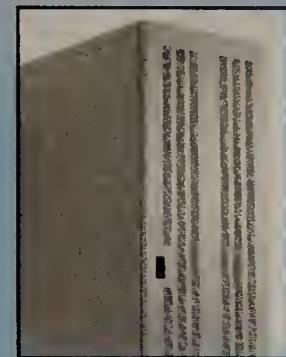
Side panels lift off for fast and easy access, and are available in either solid or vented versions.



Rugged anti-tip plates can be mounted on the front or rear of the cabinet. Reversing the plate allows for easy stowing when not in use.



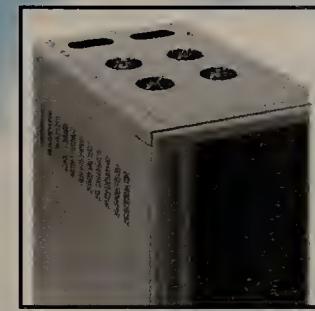
Fully-vented doors are available. All door styles can be readily changed to hinge from either the left or right.



Internal cable management accessories allow users to establish efficient and organized connectivity solutions.



Top fan panel boosts air circulation within the cabinet. A separate cable access panel keeps wiring in place during routine maintenance.



Caster, leveler mounting and grounding capabilities are integrated directly into the cabinet structure.



Our ISONet™ network enclosures come complete with all the versatile features you need to get custom performance and standard-design economy.

After 50 years of designing and building enclosures of all sizes and types, we can provide you with the most cost-effective,

tightly engineered network packaging solutions in the industry.

For the complete story, ask for our new brochure. After you've looked over the long list of options, we'll talk about how to put them together for you in an enclosure that includes everything you need. And want.

**ISONet**™  
from **EMCOR**®  
Every Option Imaginable

Call 507-289-3371 for a brochure or visit our website at [www.emcor-crenlo.com](http://www.emcor-crenlo.com).

# Server Management Starts Here...



**Rose Electronics** KVM switches allow single or multiple workstations to have local or remote access to multiple computers located in server rooms or on the desktop.

Rose is a leading KVM switch manufacturer with the most complete range of server management products. A KVM industry pioneer, Rose is known for its technically superior and price competitive products.

From simple access to complex configurations, Rose provides easy server management solutions.

Call ROSE today.

**Rose Electronics**  
10707 Stancliff Rd. Houston, Texas 77099

**800-333-9343 281-933-7673**

USA • CANADA • ENGLAND • GERMANY • BENELUX • AUSTRALIA • SINGAPORE



**MANAGE IT  
SECURE IT  
CONTROL IT  
FROM ANYWHERE**



**ROSE**  
ELECTRONICS  
[WWW.ROSE.COM](http://WWW.ROSE.COM)

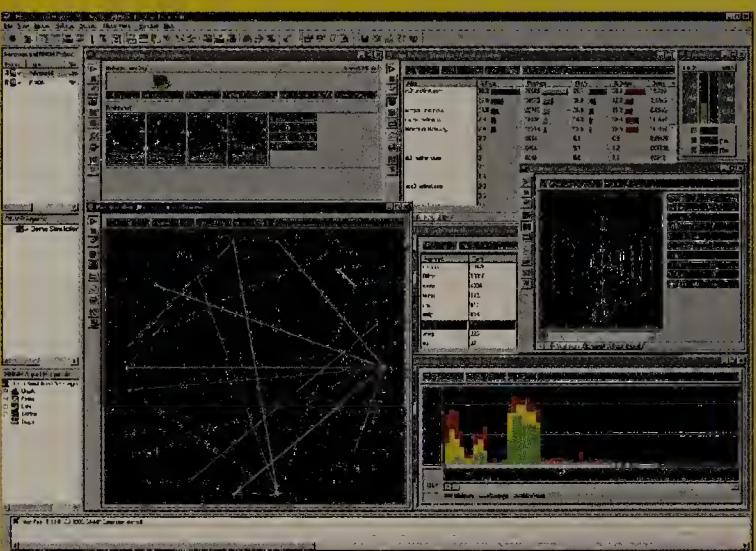


## High Performance LAN/WAN Troubleshooting & Protocol Analysis Software Solutions

**Observer—Removes the Mystery of What is Being Sent or Received by LAN Stations**

Observer identifies network trouble spots and costs thousands less than expensive hardware-based analyzers. If you have any network problems, find out the cause with Observer, Expert Observer or Observer Suite.

- **Full packet capture and decode** for over 1000 protocols, including TCP/IP (v4 and v6), NetBIOS/NetBEUI, IPX/SPX, Appletalk, SNA and DECnet
- **Switched mode** sees all ports on a switch gathering statistics from an entire switch or packet capture from any port(s)
- **Long-term network trending** collects statistical data for days, weeks, months, even years
- **Optimized ErrorTrack NDIS drivers** display true errors-by-stations
- **Real-Time Statistics** include Top Talkers, Bandwidth, Protocol Statistics, Efficiency History



**EXPERT OBSERVER®  
OBSERVER® OBSERVER® SUITE**  
**\$995 \$1895 \$2995**

- Additional probes are \$295 per local or remote segment/site/switch
- Ethernet (10/100/1000), Token Ring, FDDI

**Expert Observer—Identifies Problems and Provides Expert Information in Plain English**

Expert Observer includes all of the features of Observer plus real-time and post-capture expert event identification, expert analysis, VoIP expert and modeling of network traffic data.

**Observer Suite—The Ultimate Tool For The Most Demanding Power User**

Observer Suite provides a full complement of tools that includes all of the features of Expert Observer plus SNMP management, RMON console/Probe and Web reporting. Includes one remote Probe.

**N** NETWORK INSTRUMENTS

# Paragon®

*It's easy*



yep, actual size (1U) 8 users - 32 servers

**Remove from box.  
Insert Cat 5 cable.  
Manage 100's of  
servers.**

Paragon®, the KVM switch that's a major breakthrough in out-of-band server access and control for large-scale data centers. Its distributed, scalable architecture eliminates any single point of failure and provides fail-safe access to hundreds, or even thousands of servers. Using Raritan's advanced Cat5 transmission technology, Paragon supports direct connections up to 1,000 feet with a single Category 5 cable. Add Raritan's TeleReach for remote access over IP via LAN, Internet or dial-up modem, and you've got the local and remote KVM solution that just won Network Computing's prestigious Editor's Choice (4/30/01). Management of high-density server environments has never been this easy.

## Intelligent KVM Switch Technology.



**Raritan.**

[www.raritan.com](http://www.raritan.com)

800-724-8090 x15

Raritan and Paragon are registered trademarks of Raritan Computer, Inc.

# CISCO

Buy Lease      Authorized Reseller      Sell Repair  
New      Refurbished      Used

**WORLD  
DATA PRODUCTS**

1 800 553 0592  
[www.wdpi.com](http://www.wdpi.com)  
Email: [cisco5@wdpi.com](mailto:cisco5@wdpi.com)

Nortel  
3Com  
CISCO SYSTEMS  
RESELLER

**RACKIT**  
Technology Corporation

**Distributed Server Management**

Access, control, operate and manage your entire network (servers, hubs, routers, dumb terminals) from any number of consoles, comfortably located on your network administrators' desks, and even in remote offices over the Internet.

Ask us about Key-View and XP4000, and join other Fortune 500 IT managers currently implementing the most advanced integrated network management solutions. It will make you shine!

1 800 636 3434

[www.RackitTechnology.com](http://www.RackitTechnology.com)

**LinkSmart**  
Products as Solutions

**Specialist in all CISCO Products  
Including Memory LAN/WAN Products**

**WE CARRY ALL MANUFACTURERS**  
Livingston • Ascend • US Robotics • Micom • HP • 3Com  
Adtran • Motorola • Codex • ADC

**WE BUY AND SELL ~ NEW, USED, LEASE, RENT**

- Routers, VLANs
- DSU/CSU's
- Switches, ATM
- Access Servers
- Hubs, Modems
- Voice Over IP

888.801.2001  
phone 916.630.2001  
fax 916.630.2000  
Visit our Website at:  
<http://www.millenniumsolutions.net>

CABLETRON • 3COM • CISCO • HP • NORTEL

**CISCO**

Since 1985

We Buy & Sell

New & Used  
Fully Guaranteed  
Overnight Delivery

800.451.3407

90 Castilian Drive, Suite 110, Santa Barbara, CA 93117

[www.networkhardware.com](http://www.networkhardware.com)

BUY ONLINE

NETWORK HARDWARE RESALE

# TRAINING DIRECTORY

**Cable University**  
(800) 537-8254  
[www.CableU.net](http://www.CableU.net)  
FREE online training in network cabling installation & maintenance

**NetworkTraining.com**  
(800) NET-SKIL  
(800) 638-7545  
Network Analysis & Tool Training  
Certified NetAnalyst Testing

**BNETSYS Inc.**  
(800) BNETSYS  
[www.bnetsys.com](http://www.bnetsys.com)  
Instructor led & online Cisco certification training @ no charge

To Place Your  
Listing Here  
Call Enku Gubaie  
at 1-800-622-1108

Contact these companies today to help you with your training needs!

## NORTEL NETWORKS

3Com  Cabletron  Bay Networks 

# WOW! 89% Off!

Why Are We The Best?

- Nortel Service Contracts
- Nortel Service Renewals
- Free Technical Support
- Next-Day Hardware Replacement
- Competitive Prices
- Good As New Gear, Same as New Warranty – at Better Than New Prices

### Refurbished Specials:

BayStack 450-24T (AL2012E14) with MDA Port  
10/100/1000 BT Autosense Switch  
Limited Lifetime Warranty

Special \$995  
List \$2,695

BLN-2 Router Base Unit (71000) – Complete  
Includes Dual AC Power Supplies and SRML

Special \$1,999  
List \$12,700

BCN Router Base Unit (73000) – Complete  
Includes Dual AC Power Supplies and SRML

Special \$2,999  
List \$18,150

ARN 8 MB Ethernet Router Base Unit (CV1001003)  
Other Memory Config and modules available. Call now for pricing.

Special \$295  
List \$1,134

Dont want used? Try our low prices on new! Call Today!



Call for Free Quote!

**888-8LANWAN**  
(888-852-6926)



National LAN Exchange • [www.nle.com](http://www.nle.com)

## Get More for Today's Budget!

Contact BIZI

to **SAVE** up to 80%

- 50-80% Savings off Retail List Prices
- 120-Day Warranty
- 100% 30 Day-Money Back Guarantee
- Large Inventory, Same day Shipping
- Supplying Quality Networking Products for Over 10 Years with In-House Technical Support

Request a Quote on-line at:  
<http://www.bizint.com> or [info@bizint.com](mailto:info@bizint.com)

**(877) 438-2494**  
or (315) 458-9606 fax: (315) 458-9493

We Buy, Sell, Trade and Lease...



Your global partners in new & quality pre-owned networking equipment

**CISCO**  
Systems/Features/Memory

## CISCO EQUIPMENT

Also Available: Wellfleet, Bay, Fore, Xylogics, Livingston, & Ascend

In Stock • Fast Delivery • No Expedite Charges

### COMSTAR, INC.

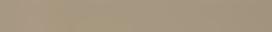
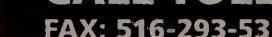
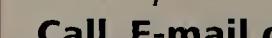
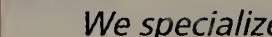
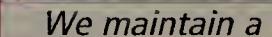
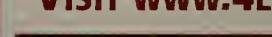
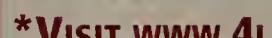
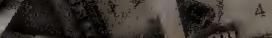
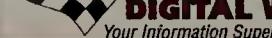
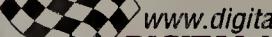
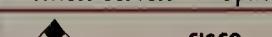
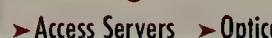
The #1 Network Remarketer

**612-835-5502**

Fax 612-835-1927 E-Mail: [sales@comstarinc.com](mailto:sales@comstarinc.com)

# USED CISCO DIRECT

[www.digitalwarehouse.com](http://www.digitalwarehouse.com)



E-Commerce/Web Support Assistant to develop and maintain the websites; coordinate soft installations; design GUI screen and graphics; administer and monitor users accessing the systems; provide training and assistance to customers on in-house computer systems; operate Data Security System. B.S. in business administration or computer fields and one year of web support experience that include Network, Seagull Jwalk developer, AS/400, Window NT, Java Script, ASP, HTML, SOL, Clarion Language, Web Tool and Animation Tool. 40hrs/wk, 8am-5pm, M-F. Job is in St. Louis, MO. Send resume to Automated Installment System Co. 955 Executive PKWY, Suite 201, St. Louis, MO 63141 (Attn: Carol Manson) with proof of legal authority permanently to work in U.S.

Manuf./Dist Co of Hand Tools seeks Senior Prog./Analyst to maintain info & prog. stds.; identify work process improvements, plan project requirements, research business systems, confirm operation objectives & approach; write prog's to automate bus sys applicatns, confirm results; provide sys ref. Bachelor's in Computer Sci & Eng'g, or equiv. based on cred. eval. Min. 2 yrs. in-job exp. Exp. must include AS/400, CL/400, RPG/400, ERP Business Sys Environ., & JD Edwards World Vision. Resumes to HR, NMTC, Inc. dba Matco Tools, 4403 Allen Road, Stow, OH 44224. No calls. EOE.

Computer Programmer wanted by Software Service and Business Solution Provider Co. in Carmel, IN. Must have Bachelor in Computer Science/Information Technology/Electronic Engineering & 2 yrs programming exp. Respond to: Mr. Christopher Stater, Computer Renditions, Inc., 11590 N. Meridian Street, Suite 104, Carmel, IN 46032.

CyberTech Systems, Inc. provides IT strategy consulting, systems integration and software development to clients nationwide. We have immediate, full-time opportunities for both entry-level and experienced professional in any of the following areas:

#### SAP R/3

- ◆ Functional (Financials, Logistics, HR)
- ◆ Technical (BASIS, ABAP, ALE/EDI)

#### NETWORKING

- ◆ Network Engineers & Consultants
- ◆ Systems Engineers (MCSE)
- ◆ LAN/WAN Specialist (CISCO)

#### APPLICATION DEVELOPMENT

- ◆ Microsoft Certified Solution Developer (Visual Basic, Visual C++)
- ◆ Database Administrators (Oracle, SOL Server)
- ◆ Web Based Development (Java or JavaScript, CORBA, Microsoft ASP, ActiveX, COM/DCOM)

Job opportunities are also available for Sales Managers, Marketing Managers, Business Managers, Human Resources Managers, Controllers and Technical Recruiters. Bachelor's or Master's degree required, depending on position. We also accept the foreign education equivalent of the degree or the degree equivalent in education and experience. Excellent benefits. Send confidential resume and salary requirements to: CyberTech Systems, Inc 1111 West 22nd Street, 8th Floor, Oak Brook, IL 60523 or 8 Neshaminy Interplex Suite 209, Trevose, PA 19053. EOE.

Systems Engineer, full-time, 8:00 a.m. to 5:00 p.m., \$54,657.00 /yr. Job duties: Develop business applications, customize commercial business applications from design to final implementation by analyzing business needs, choosing development technologies, assessing development cost, programming, testing and implementing. Provide support on business applications for clients, including trouble-shooting, database maintenance and upgrade. Job requirements: Master's Degree in Computer Engineering or related and 1 year of experience as a Systems Engineer or 1 year of experience as a Computer Engineer. Submit resume and Social Security number to: Indiana Department of Workforce Development, Attn: Gene Reppogle, 10 N. Senate Ave., Indianapolis, IN, 46204-2277. Job I.D. # 8098553. Must be currently authorized to be permanently employed in the U.S.

#### PROGRAMMER/ANALYST

Global automotive supplier seeks Programmer/Analyst for Metro Detroit Headquarters location. Qualified candidates will possess the following: Bachelor's Degree in a Computer Science discipline, or equivalent, 1 to 3 years of experience as a Programmer Analyst, Programmer or Developer, experience with implementations and upgrades of PeopleSoft HR and PeopleCode, Information Resource Management, Business Data Communication & Computer Networks. For confidential consideration, please forward resumes to the following: 750 Stephenson Hwy. Troy, MI 48083, Attn: Carrie Holder (CH-PA). EOE

#### Software Engineer III

Duties: Analyze, design, develop, test, implement and document financial applications. Develop the application and code in assigned language. Test program to ensure that coding is accurate and information is correct for user need. Modify program after test and use review if required. Document final program and develop user instructions, software/hardware requirements, and program inputs/outputs. Certify results to ensure that design format is maintained. Provide on-going maintenance of program. Participate in group meetings to discuss approaches to current projects. Comply with all established procedures and policies of employer.

Requirements: B.S. in computer science or equivalent. Must have five years experience as a Software Engineer. Academic or industrial experience following B.S. degree comprising the following: At least two of the five years of experience must have included UNIX, UNIX Shell Scripting, Electronic Data Interchange, and either Netscape ECXpert, St. Paul Software (SPS), Mercator or other translator software experience.

Salary is \$80,000 per year; 40-hour work week; 8:00 a.m. to 5:00 p.m. Work location is Englewood, Colorado.

Interested applicants should send a résumé to the Colorado Department of Labor and Employment, Employment Programs, Attn: Jim Shimada, Two Park Central, Suite 400, 1515 Arapahoe Street, Denver, Colorado 80202-2117. Please refer to Job Order No. JL 1120155. Interested applicants must have proof of legal authority to work permanently in the United States.

SAP Technical Lead-You will analyze and map business requirements and objectives, developing and modifying SAP system solutions to satisfy business needs in the Sales & Distribution area. You will provide technical leadership to implementation teams and resolve implementation problems with subordinate consultants. In performing these duties, you will use expert knowledge of SAP's R/3 software system and its SD module, and travel 20-30% to company locations. Position requires a Masters or equiv. in Bus. Administration, Finance, Accounting, or other business specialty, or in Computer Science, and 2 years experience implementing SAP R/3 software system's SD module. (will accept Bachelors with 4 yrs. exp.). Interested candidates should respond to: Cognis Corporation, 5051 Estecreek Drive, Cincinnati, OH 45232. Attn: Tiffany King. No phone calls please.

#### IT Professionals

Entergy, one of America's largest utility companies, has multiple openings for the following occupations in multiple locations:

- Information Technology Professionals
- Systems Analysts
- Computer Programmers
- Software Engineers

For immediate consideration, please forward your resume and salary requirements to: Entergy Corporation and operating subsidiaries, Attn: Ms. Lori Hendler, HR Department, PO Box 61000 New Orleans, LA 70161. Phone: 504-576-4117 EOE/M/F/D/V Principals only. You will only be contacted if you are considered for an interview.

#### Team Lead (Software Engineer)

Duties: 1. Analyze, design, develop, test, implement and document new and existing application software programs; 2. Design and develop software applications in client / server environments related to inventory management, payroll, revenue and accounting records, and engineering applications; 3. Participate in unit, integration and system test procedures; 4. Maintain and enhance existing software applications; documenting new and existing software applications; 5. Develop and document tools to enhance application development and testing; 6. Comply with all established procedures and policies of employer; and 7. Administer reporting environment using Seagate and Brio technologies.

#### Requirements:

B.S. in computer science or equivalent. Must have five years experience as a Software Engineer. At least three of the five years experience following the B.S. degree must include UNIX, ORACLE (PL/SOL), and Seagate Crystal Reports; and at least one of the five years experience following the B.S. degree must include Seagate Info Administration, Seagate Software Development Kit (Visual Basic/C++) and Brio.

Salary is \$69,534 per year; 40-hour work week; 8:00 a.m. to 5:00 p.m. Work location is Englewood, Colorado.

Interested applicants should send a resume to the Colorado Department of Labor and Employment, Employment Programs, Attn: Jim Shimada, Two Park Central, Suite 400, 1515 Arapahoe Street, Denver, Colorado 80202-2117. Please refer to Job Order No. JL 1120152. Interested applicants must have proof of legal authority to work permanently in the United States.

Amdocs, a leading developer of software solutions for the telecommunications industry is seeking team players with strong technical & personal skills for the following positions at our Chesterfield, MO location.:

#### Systems Analysts

-to analyze existing info systems & develop new systems. Req'd.: Bach. Deg. in Comp. Sci., Math, Eng'g., or related discipline & 2 yrs. exp. as Systems Analyst or in software Development. Must have exp w/ Ingres, SOL, 4GL & UNIX.

-to develop new systems to improve production or work flow as required. Req'd.: Bach. Deg. in Comp. Sci., Math, Eng'g. or a related discipline & 2 yrs. exp. as Syst. Analyst or in Software Development. Must have exp. w/ COBOL, Power Builder & SOL.

-to prepare workflow charts & diagrams with details of existing & proposed information systems. Req'd.: Bach. Deg. in Comp. Sci., Math, Eng'g., or related discipline. Must have exp w/ Java, HTML, Visual Basic and Oracle in WindowsNT and UNIX environments.

-to produce detailed descriptions of user needs, program functions & steps required to develop & modify new & current systems. Req'd.: 2 yrs. exp. as Systems Analyst, Programmer or Software Developer. Must have exp. w/ COBOL & C. Must also have exp. w/ SOL or DCL.

Send resume to: Amdocs, Inc. Attn: Amy Skalski 1390 Timberlake Manor Parkway, Box IL 13 Chesterfield, MO 63017 Fax: 314-212-7500 jobs@amdocs.com



#### The Quality Labor Provider

Since 1947

We are currently accepting resumes for the following position:

#### Database Administrator

This position will work in our Information Systems

Department and will coordinate physical changes to computer databases; and codes, tests, and implements physical databases.

#### Essential Duties and Responsibilities:

- Coordinate and integrate all databases within the company.
- Design and create user interface and presentation of data, including charts, graphs, tables, text and animation.
- Works with internal and external users to develop search, summary and reporting methods.
- Integrate company database with company web page.
- Designs logical and physical databases.
- Performance tuning on database programs.
- Provides end-user support 24X7 including installation, configuration, troubleshooting and negotiating solutions to custom user requirements.

#### Qualifications:

- Computer Science and / or Electronics Engineering Degree or two to four years related experience.
- Certificates in database languages and operation are desirable. Demonstrable experience in ACCESS, C++, Visual Basic and SOL is required.
- Certificates in networking operating systems are desirable, including Novell and Microsoft NT.
- Certificates in workstation operating systems are desirable. Demonstrateable experience with Windows 95, Windows 98 and Windows NT are required.

We offer excellent benefits: Health, Dental and Life Insurance; 401-K; Profit Sharing; Tuition Reimbursement and Vacation.

Please send your resume and salary requirements to:

Danos & Curole  
Attn: Hiring Department  
Data Base Administrator  
P.O. Box 1460,  
Larose, Louisiana 70373

E.O.E.

Systems Analyst sought by office products distribution company in Broomfield, CO to work in Broomfield & other unanticipated job sites in the US. Under close supervision, engage in moderately complex tasks regarding supporting, troubleshooting, debugging, & modifying a proprietary warehouse & inventory software management system where the software system incorporates client/server technology & interfaces with ORACLE Relational Database Management Systems & runs on a UNIX operating system. Write scripts within SOL. Monitor uploads & downloads between proprietary ordering system & a Warehouse Management System. Work with MS Access & ORACLE Relational Database Management Systems & write Queries. Specifically, troubleshoot & debug the software system. Enhance & modify the system as reqd. Liaison with development team to report & resolve recurring problems. Use SOL & C programming languages in completing duties & responsibilities. Requires Bachelor's in comp. sci. or related field, incl. bus. mgt. info. sys.; working knowledge of SOL, relational database management systems, & UNIX. 8am-5pm, M-F; \$53,000/yr. (2 openings.) Respond by resume to James Shimada, Colorado Department of Labor & Employment, Employment & Training Division, Tower II, #400, 1515 Arapahoe, Denver, CO 80202, & refer to Job Order Number JL1120091.

Concio head quartered in Santa Clara, California, a leader in software development and internet solutions, has multiple senior and entry level positions available for: Programmer Analysts, Software Engineers, Project Managers, IT Consultants, & Database Administrators. If you are a highly motivated individual send your resume to Concio HR Dept at 408-988-4051

Programmer Analyst req., by software dev. com. w/ Bachelors degree & 2 yrs. exp. w/the foll skills: Dev. 2000, Visual Basic, Oracle, SOL, Crystal Report, Com/Corn, ASP, Active X & MS. Access. Dev. on-line batch appl. & modify programs. Send res., Attn: Recruiter: Alliance Member Svcs. Inc. 333 Front St., Suite #200 Santa Cruz, CA 95060.

Amdocs, a leading developer of software solutions for the telecommunications industry is seeking team players with strong technical & personal skills for the following positions at our Champaign, IL location.:

#### Systems Analysts

To analyze existing info systems & develop new systems. Req'd.: Bach. Deg. in Comp. Sci., Math, Eng'g., or related discipline & 2 yrs. exp. as Systems Analyst or in software Development. Must have exp w/ Ingres, SOL, 4GL & UNIX.

Send resume to: Amdocs, Inc. Attn: Amy Skalski 1390 Timberlake Manor Parkway, Box IL 13 Chesterfield, MO 63017 Fax: 314-212-7500 jobs@amdocs.com

e-lite  
companies

e-merging  
companies

e-ssential  
companies

e-normous  
opportunities

IT careers

Senior Software Engineers Duties include: Design and develop software applications for the e-Business analytics market. Design and develop client server database applications for use on UNIX and Windows NT platforms with Visual Basic, C++ and Java programming languages. Develop databases using ORACLE and MS-Access. Develop Graphical User Interfaces with Visual C++, MFC, SDK, and OLE/COM. Enhance and customize existing software applications. Test software to determine reliability. Provide strategic solutions to inter-operability and upgrade problems. Assist clients with installation and use of software. Minimum Requirements: MA/MS or equivalent in Engineering, CS or related field of study (Foreign equiv. accepted) Or in the alternative BS/BA in Engineering, CS or related, plus 5 years of progressive experience in either the job offered or related occupation in engineering, systems analysis, programming or related. ALSO, must have demonstrated knowledge or experience with: (1) developing GUI client/server applications using Visual C++, C++, MFC, and Java; and (2) database development using Oracle and MS-Access. Multiple openings. Offered salary is \$82,600/year (40hrs/wk). Std Company Benefits. Send resumes in duplicate to: Labor Exchange Office, Case #20013065, 19 Stanford St., 1st fl., Boston, MA 02114.

Project Lead, Norcross, GA. Direct dev. software team incl. full life cycle development, for service provider of applications supporting Elec. Gas & Water util. Co-ordinate with marketing, operations, & other engineering teams to produce project plans & guide the process for service apps. Lead projects for the devp. of svcs. that may vary bet. web-based apps. & client server COM or DCOM based processes. Req.:Masters (or foreign equiv.) in Engineering or Comp. Sci. or related field and 2 yr. exp. in same position or in Software Project leadership. Must have 2 yrs. exp. (which may have been obtained concurrently) with software dev. that incl. full cycle develop. in a Windows envn. & COM/DCOM, SQL and MTS. \$75,000/yr. 40hr/wk. Send resume to Terrie Swanhar, Personnel Manager, Schlumberger RMS, Inc., 5430 Metric Place, Bldg. 300, Norcross, Georgia 30092.

Senior Systems Analyst for financial services provider to work on investment technology. Must have MS in Comp Sci. Reply to Ad No. 19, P. Casey, Insource, LLC, 10 Front Street, Collinsville, CT 06022, fax 860-693-6367. EOE/M/F/D/V/Legal workers only please.

Software Engineer wanted by pharmaceutical research and development company in Wallingford, CT. Must have B.S. in Computer Science or Computer Engineering plus 6 months experience in job offered, software development or related. Send resume to: David Bridges, Bristol-Myers Squibb Co., Rte 206 & Provinceline Road, Princeton, NJ 08543.

Director, Engineering, Boston Labs wanted by a Telecommunications co. in Boston, MA. Must have a Master's degree in Comp. Sci. or related field & 1 year exp. as Sr. Software Engineer, managing and mentoring engineering teams on complex projects. Experience must include each of the following: software architectural and detail design with object oriented methodology; complex multi-tiered architecture definition, network programming in TCP/IP, Java, multi-thread programming; designing and managing complex IT systems/services with high availability and massive scalability requirements; C++ development on Linux platform and Windows platform; COM, ATL, ACE; GNU tools such as GDB and gmake; and performance tuning/profiling; plus knowledge of XML and browser programming. Respond to Net2Phone, Inc., 200 High Street, 3 Flr. Boston, MA 02110, Attn: Matt Eichner reference #7.

Vistaar Technologies is currently considering applicants for the ff: Advanced Member of Tech Staff - Research and develop complex computer solutions for large businesses. Build systems using one or more of math models, advanced data reduction and interpretation algorithms, obj-oriented prgming, client/server architecture. Req MS Comp Sci, Info Systems, any field of Engg, Math, Stats, Physical Sciences or other related field or equiv combo of educ and work exp.

Member of Tech Staff - Research, & develop computer solutions of low to moderate complexity for large businesses. Build systems using obj-oriented prgming, and/or client/server architecture. Req BS in Comp Sci, Info Systems, any field of Engg, Math, Stats, Physical Sciences, or other related field or equiv combo of educ and work exp.

Resume in dupl to HR, Vistaar Technologies, 200 Lanidex Plaza, Parsippany, NJ 07054.

Full time Systems Integrator responsible for writing codes for data transformation agents using Java and C++ programming. Will work with user to map data from Legacy systems to the Oracle database. Develop and implement test plans to interface design and mapping. Will use SQL tools to analyze what is happening in the Oracle database. Will research Oracle table relationships to troubleshoot, write reports or implement customized solutions. Document the design, mapping, and programming of developed and anticipated interfaces and conversions. Must have Bachelor's degree in IS, CS or related field, foreign degree equivalent accepted. (Employer is willing to accept Master's degree in lieu of Bachelor's). Must have 2 years of exp. in the job offered or 2 years in a position with same duties. Salary: \$64,795/yr. Send resume to: Valarie Castanet at RMC Industries Corp, 1 Decatur Towncenter, 150 E. Ponce de Leon Ave., Ste 450, Decatur, GA 30030.

Software Engineers and Programmer Analysts (multiple positions) sought by Edison, NJ-based Comp S/ware Consultancy firm. Must have Bach or equiv in Comp Sci or engg & 1 yr s/ware exp. Respond to: HR Dept., AK Systems, Inc, 100 Metroplex Dr., Ste 303, Edison, NJ 08817.

IT Positions (Memphis, TN): Software Engineer: Design/develop Internet based scheduling/resource mgmt system in 3-tier web environment applying MS DNA tech. and utilizing ASP, JavaScript, VB, SQL server relational db and HTML. Software Developer: design/develop/implement high traffic web/e-commerce projects in clustered environment using MS DNA, OO programming and relational db tech. and C, VB, SQL server, COM+, ASP, JavaScript, HTML, XML, XSLT, Visual InterDev, IIS, TCP/IP. Qualification: Must have higher education in Comp. Sc., Elect. Engr, CIS, MIS or in a closely related field. Software Engineer requires MS degree plus 6 mon. exp.; Software Developer requires BS degree plus 2 yrs. exp. Competitive salary: 40 hr/wk; Mon.-Fri., 8:30 am-5:30 pm. Fax resume to: Human Resources at (901)869-5010. No phone call/EOE.

SW Eng'rs: Research, dsgn, devlp, test Oracle DBA/Oracle Appl'n DBA w/ High Availability Servers, & Parallel Servers on Unix/Win Platforms; dsgn, devlp interfaces w/ above systems in Developer 2000, PowerBuilder, VB, C/C++, SQL. 40h/w, 8-5, BS in eng'g or business rel'td field, 1-yr wk exp w/ Oracle DBA & VB, Resume to S. V. Mohan, Frontier Solutions Inc. at 10150 Belle Rive Blvd., #2108, Jacksonville, FL 32256/ Email to saibhavana@aol.com

Network Administrator Modify, implement, & support an NT workstation LAN/UNIX (Windows NT/2k/HP & Sun Solaris). Backup network using ARCServe 2000. Network Administration of web based e-mail. Troubleshoot T1 connections. Support NT/UNIX users. B.S. in Comp. Info. Sys. or Comp. Sci. & 1 yr exp. Send resume to: HR, Integrated Solutions, 2137 Hwy 35, PO Box 623, Holmdel, NJ 07733.

Lead Developer & Software Engineer (Manhattan) - design, develop & implement systems, participate in full lifecycle systems development, use Java, C++, XML, Perl/Scripts, RDBMS. Must have MA in Comp. Sci. or Eng. and 2 yrs. exp. in job offered or 2 yrs. as Software Eng or Progr./Analyst. Salary commensurate with experience. Send resume to HR Dept., Cyber Dialogue Inc. 304 Hudson St., NY, NY 10013

Programmer Analyst. Design, develop, analyze and test client server based software applications using tools such as C, C++, TCP/IP, Perl, SQL, HTML, JavaScript under Unix operating system and Windows platforms. Position requires a minimum of a B.S. degree in Comp. Sci., Eng., rel. field/equiv, and 2 yrs exp. Mail resume to: Human Resources, Roshi Tech, Inc., 74 Northeastern Boulevard, Suite 22B, Nashua, NH 03062; or email to info@roshitech.com

Associate Implementation Consultant: Entry level. Work under close supervision to assist exper. consultants in understanding client operational flow and assist in PkMS & other product config & data set-up testing and onsite support during go-live process. Over 50% travel. Req BS in eng or comp sci. \$38K & up. Resumes to: J. Lurey, Manhattan Associates, Inc. 2300 Windy Ridge Pkwy, 7th Fl. North Atlanta, GA 30339

PROGRAMMER ANALYST, Advantechs group has several openings for its IT professionals for its location in New Jersey and elsewhere with atleast 2 years of experience in any of the following skills: system/Database admin: Unix, NT, LAN, DB2, Oracle, programer/analyst eng: client/server, mainframe, people-soft, SAP, Oracle, C, C++, Java, HT ML, VB, cobol. some positions require Bachiors degree and others Masters degree. Equivalent degree and experience is also accepted. Exc pay and benefits, please indicate the position applied for. Mail resume to HR DEPT, Advantechs Group, 1430 Oaktree RD, suit F, ISELIN, NJ-08830

Programmer/Analyst-Tampa - VB, ASP, Crystal Reports, SQL Server, Visual Studio, Com/Dcom. BS Computer Science with 2 years exp. or MS Computer Science with 6 months exp. in job offered required. Multiple positions. Travel to client sites req'd. Prevailing Benefits Contact HR, Mangotech, Inc. 2805 West Bush Blvd., Suite 222, Tampa, Florida 33618. EOE.

SCANA Corporation needs a Sr. Systems Analyst to: Design, develop, implement, and support major or complex computerized systems that meet the information requirements of electric and gas company develop applications using SQL, VB, Visual InterDev, Crystal Reports. Must have a bachelor's degree in computer science, electrical engineering, or related discipline, plus 2 yrs exp in job specified or 2 yrs exp in programming, application development, and data analysis. Please send your resumes to SCANA Corporation, SSA-KHMC048, Columbia, SC 29218.

Application Analyst Programmer I (Chapel Hill, NC): Administrate & Develop Oracle database; design & develop Web Database Application using Oracle, Access, ASP, HTML/DHTML, Java, JavaScript, VBScript, SQL, PL/SQL, Perl & FOCUS. Req. B.S. in CS, Electrical Engg. or other closely related field w/ 1 yr. exp. in job offered. As America's oldest public university, we're proud to offer competitive salaries, comprehensive benefits & excellent long-term growth potential. Interested candidates must complete the University's application for staff employment. UNC-CH uses a general recruitment closing date of 7 business days & closing date may be extended by the hiring supervisor. For an application, phone (919)962-2991 or apply at: Employment Dept., HR Office, The University of North Carolina at Chapel Hill, CB #1045, 725 Airport Rd, Chapel Hill, NC 27599-1045, E-mail: employment@unc.edu or see website at www.jobs.unc.edu. EOE.

Software Developer needed to dsgn/dvlp applics using C/C++, Java, VB & Oracle on Unix & Win. Apply to J. Lombard, Lapis Software, 601 Jefferson Rd #101, Parsippany, NJ 07054.

Senior Web Engineer wanted to work at investment management company. Successful candidate must have web development exper. incl. advanced knowledge of browser rendering engines, Javascript and DHTML/HTML. If you are interested, please send your resume to Daniel W. Davis, VP, HR Relationship Manager, Wellington Management Co. LLP, 75 State St., Boston, MA 02109.

WE DO  
A  
BETTER  
JOB AT



HELPING YOU  
GET ONE.

IT careers.com

## COMPUTER PROFESSIONALS

MAKE IT YOUR BUSINESS  
TO GET IN ON E-BUSINESS

CHC is a strategic E-Business solutions and professional services company that is powering a new breed of rapid growth Internet developers. With thirty years of experience, CHC is a global leader in systems integration, migration and innovation, enabling companies to stay ahead of the technological curve.

Immediate opportunities for:

- WEB ARCHITECTS and
- WEB DEVELOPERS  
w/ a combination of the following:
- COLD FUSION • SPECTRA
- ORACLE • VISUAL BASIC
- VISUAL C++ • SIEBEL • ASP
- COM, DCOM • JSP • HTML
- JAVA, JAVA BEAN • EJB JAVA
- SERVERS • WEBSPHERE
- IBM MQ SERIES • XML, UML
- MTS • CLARIFY • PERL
- OBJECTPERL • SPYPERL
- SMALLTALK • PL/SQL
- VISUAL AGE

We also have positions open for:

- PROJECT MANAGERS
- BUSINESS ANALYSTS
- SYSTEMS ANALYSTS
- WEB GRAPHIC DESIGNERS
- NETWORK ENGINEERS  
with integration, registry, DLL's and MSI packaging
- OBJECT ORIENTED DESIGN
- CMM LEVEL II
- UNIX SYSTEM ADMINS  
with Sun Solaris

For more detailed job descriptions, visit our website @ [www.computerhorizons.com](http://www.computerhorizons.com)

We'll provide you with a stimulating supportive environment, attractive salaries and benefits including: Tuition Reimbursement, 401K Savings Plan Company Matched, Life, Health, Dental Plan, On-Going Technical Training and Employee Assistance Program. Please forward your resume to: Tom Culmone, Staffing Manager, Dept 716, COMPUTER HORIZONS CORP. 49 Old Bloomfield Avenue, Mountain Lakes, New Jersey 07046-1495. Call 973-299-4000 or 1-800-321-2421. Fax: 973-331-1632. E-mail: [jobs@computerhorizons.com](mailto:jobs@computerhorizons.com) (in MS Word format only, please). An Equal Opportunity Employer M/F.

**Talent is  
the fuel of  
the new  
economy.**

**Fill up  
with  
ITcareers.**

ITcareers and  
ITcareers.com  
can put your  
message in front  
of 2/3 of all US  
IT professionals.  
If you want to  
make hires,  
make your way  
into our pages.  
Call Janis  
Crowley at  
1-800-762-2977

**IT CAREERS**  
where the best  
get better

## UNITED NATIONS NATIONS UNIES

**United Nations Joint Staff Pension Fund (UNJSPF)  
Information Management Systems Section  
UNIX Administrator, P-3,  
New York**

The United Nations Joint Staff Pension Fund (UNJSPF) is seeking a professional with demonstrated experience to perform the following duties: 1) installation and maintenance of AIX system and subsystems for RS/6000; 2) monitor and evaluate system performance; 3) maintain user profiles; 4) troubleshoot system and network problems; 5) establish effective backup and recovery procedures; 6) configure and maintain communication devices and printers; 7) act as the security liaison in setting up plans and procedures; 8) participate in applications development.

The ideal candidate would have a university degree (B.S.) in computer science or equivalent experience with relevant discipline such as mathematics or statistics. Ten years experience in UNIX and host systems administration. IBM AIX experience is preferred but not required.

Fluency in English required.

Qualified women are encouraged to apply.

The United Nations offers a competitive benefit package. (Please refer to our homepage, [www.un.org](http://www.un.org), for further information)

**Deadline for applications:** 14 July 2001. Detailed curriculum vitae including date of birth and nationality should be sent to:

**01-D-JSP-001799-E-NY, Staffing Support Section  
Office of Human Resources Management, Room 2475C  
United Nations, New York, NY 10017  
Fax No: (212) 963-3134, E-mail address: [Staffing@un.org](mailto:Staffing@un.org)**

Due to the volume of applications, all internal candidates and only those external candidates under serious consideration will be acknowledged.

**Database Administrator**

Location: Las Vegas, Nevada. Duties: Assist in database design, analysis, & administration; design, maintain, and support security of company's database and database tools; maintain efficiency of database and integrity of corporate data; troubleshoot and monitor system performance; define database and enforce data dictionary standards and procedures; consult with Information Systems Department and clients on matters relating to database management systems; project leader for database projects and maintain technology advancements and recommend changes; collaborate on designing and developing web-based DBA systems management tools including real time performance monitoring and trending analysis, change management, and tuning. Required applications include Oracle, Designer & Forms/Reports. Requires: B.S. (or equivalent) experience in Computer Science or a related field and 3 years' experience as a Database Administrator or Programmer/Analyst. Experience which may have been obtained concurrently must include 2 years using Oracle, Designer & Forms/Reports. Qualified applicants send resume to: Jocelyn A. Cascioli, Director, Employment & Employee Relations, Sierra Health Services, Inc., 2716 N. Tenaya Way, Las Vegas, Nevada 89128

**Trusted by  
more hiring  
managers than  
any IT space  
in the world.**

**ITcareers.com**

**NET2S**  
Network Service Solutions

NET2S is a leading International Consulting and Engineering firm specializing in networking and communications technologies. As an industry leader we seek to provide our Global 500 clientele with creative people who implement innovative technological solutions. Our goal is to offer unparalleled Professional Services on mission critical systems and networks. We are capable of facilitating all phases of the systems and engineering life cycle: Planning, Architecture and Design, Deployment and Integration as well as Technical Operations.

Presently we are seeking qualified networking and systems engineers to our team. If you possess skills in the following areas please apply:

- Sr. Network Engineers (Cisco, Nortel)
- Unix Administrator
- TIBCO Engineer
- Network Security Specialist
- Telecom Engineer
- Software Developers

All positions require BS/MS degree with a minimum of 2 to 3 years of experience in the field. Must possess excellent communication skills as well. NET2S offers a competitive salary, with an excellent benefits package including medical, dental and 401(k). Relocation assistance may be provided. For immediate consideration, please send your resume to: NET2S, 82 Wall Street Suite 400, New York, NY 10005; Fax: (212) 279-1960; Phone (212) 279-6565; or Email: [jobs@net2s.com](mailto:jobs@net2s.com)

We are an equal opportunity employer.



August 13-17, 2001 – JW Marriott Hotel – Washington, D.C.

- 25 REFEREEED PAPERS on the best new research including, "Reading Between the Lines: Lessons from the SDMI Challenge" by Edward W. Felten, Princeton University, and his research team
- KEYNOTE ADDRESS by Richard M. Smith, CTO, Privacy Foundation "Web-Enabled Gadgets: Can We Trust Them?"
- Practical and immediately useful TUTORIALS:
- INVITED TALKS

<http://www.usenix.org/events/sec01>

Sponsored by **USENIX** The Advanced Computing Systems Association



**Power the future of your business  
with our technology talent.**

We're North America's leading provider of technical gurus for e-business development, multiplatform systems, network engineering and tech support. We guarantee that our people are qualified to get the job done right. Call today and we'll show you how easy it is to keep profits up and overhead down.



Free 2001 Salary Guide.  
Call today, and find out  
what they're paying  
technical talent all over  
the country.

**RHICONULTING®**  
Technology Professionals

A Robert Half International Company

[rhic.com](http://rhic.com) • 800.793.5533

© RHIC Consulting, EOE

## FINANCE

Mary Fanning, Vice President Finance  
Paul Mercer, Finance Manager

Mary Kaye Newton, Billing/AP Coordinator

## HUMAN RESOURCES/BUSINESS SERVICES

Monica Brunaccini, V.P. Human Resources/Business Services

Elizabeth Price, Human Resources Manager

Eric Cormier, Human Resources Associate Rep.

Frank Coelho, Business Services Manager

Lisa Thompson, Business Services Administrator

Mark Anderson, Business Services Supervisor

Kevin McMillen, Business Services Coordinator

## MARKETING

TerryAnn Croci, Director of Marketing

Wendie Larkin, Public Relations Manager

Barbara Sullivan, Senior Research Analyst

Johanna Lombardi, Marketing Communications Manager

Donna Kirkey, Senior Design Manager

Kristin Wattu, Senior Marketing Specialist

Judy Schultz, Senior Graphic Designer

Cindy Panzera, Graphic Designer

Nancy Petkunas, Marketing Specialist

## GLOBAL PRODUCT SUPPORT CENTER

Nancy Parquette, Corporate Programs and Events Manager

## ADVERTISING OPERATIONS

Karen Lincoln, Senior Director of Advertising Operations

Maro Eremyan, Advertising Coordinator

Jami Thompson, Advertising Coordinator

Veronica Trotto, Direct Response Ad Coordinator

Cheryl Hill, Traffic Coordinator

## PRODUCTION

Ann Finn, Senior Production Director

Greg Morgan, Production Manager

Mike Guerin, Senior Print Buying Supervisor

## CIRCULATION

Richard Priante, Senior Director of Circulation

Darcy Beach, Circulation Operations Manager

Bobbie Cruse, Subscriptions Manager

Mary McIntire, Senior Marketing Specialist

## RESEARCH

Ann MacKay, Research Director

## DISTRIBUTION

Bob Wescott, Distribution Manager/(508)879-0700

## IDG LIST RENTAL SERVICES

Paul Capone, Account Executive

P.D. Box 9151, Framingham, MA 01701-9151

(800) 343-6474/(508) 370-0825, FAX: (508) 370-0020

## SEMINARS AND EVENTS

Robin Azar, Vice President of Events

Michele Zarella, Director, Events Business Development

Sandra Gittlen, Events Editor

Betty Amaro, Event Finance Manager

Andrea D'Amato, Sales Director/Strategic Partnerships

Kristin Ballou, Senior Event Sales Manager

Sandy Weil, Event Sales Manager

Debra Becker, Dir., Marketing &amp; Audience Development

Amy Letichevsky, Marketing Manager

Tricia Fiscale, Sales and Marketing Coordinator

Timothy Johnson, Marketing Coordinator

Kevin Gilligan, Director, Events Operations

Jill Keaveney, Senior Event Planner

Tim DeMeo, Event Coordinator

Andrea Fusco, Registration Manager

## ONLINE SERVICES

Alonna Doucette, V.P., Online Services

Hillary Freeley, Director, Online Audience Development

Charley Spektor, Director, Business Development

Adam Gaffin, Executive Editor, Online

Melissa Shaw, Managing Editor, Online

Jason Meserve, Multimedia Editor

Sheryl Hodge, Online Copy Chief

Marlo Matoska, Senior Web Producer

Katherine Ward, Web Producer

Christopher Cormier, Web Producer

Kris Guay, Associate Web Producer

Elaine Valovic, Web Researcher

## INFORMATION SYSTEMS/NEW MEDIA SERVICES

Michael Draper, V.P. Systems &amp; Technology

Tom Kroon, Senior Software Engineer/Architect

Bob Roddy, Web Software Engineer

Manav Sehgal, Web Software Engineer

William Zhang, Senior Software Engineer

Rocco Bortone, Senior Network Manager

Peter Hebenstreit, Network Specialist

Kevin O'Keefe, Systems Support Manager

Brian Wood, Senior Systems Support Specialist

Joshua Mason, Systems Support Specialist

Puneet Narang, Manager of Database Technologies

Pam Gertsios, Database Specialist

Anne Nickinello, Director of New Media Services

Deborah Vozikis, New Media Design Manager

Sean Landry, Web Producer

Michael Ferreira, Graphics Production Coordinator

## IDG

Patrick J. McGovern, Chairman of the Board  
Kelly Conlin, CEO

Network World is a publication of IDG, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. IDG publishes over 275 computer publications in 75 countries. Ninety million people read one or more IDG publications each month. Network World contributes to the IDG News Service, offering the latest on domestic and international computer news.

NetworkWorld seminars & events and Events are one and two-day, intensive seminars in cities nationwide covering the latest networking technologies. All of our seminars are also available for customized on-site training. For complete and immediate information on our current seminar offerings, call a seminar representative at 800-543-4668, or go to [www.nwfusion.com/seminars](http://www.nwfusion.com/seminars).

## NetworkWorld

## EDITORIAL INDEX

A	ADVA Optical Networking	25
	Agere Systems	8
	Alga Computing	32
	Allegiance Telecom	23
	Alloptic	25
	Altiris	39
	Aprisma	12
	AT&T	10,23
	AuroraNetics	8
B	Baltimore Technologies	8
	Breakaway Solutions	29
	Buffalo Technologies	8
C	Cable & Wireless	24
	Cabletron	12
	Cisco	8,29
	Comcast	10
	Computer Associates	8
	CoServ Communications	25
D	DoCoMo	29
	Dorado Software	25
E	Enterasys	12
F	Finisar	19
G	Global Crossing	23
	Global Network Technology Services	12
	Gordano	29
H	Hewlett-Packard	19
J	Jamcracker	12
L	Lotus	1
M	MCI	24
	McLeodUSA	23
	Metrobility Optical Systems	25
	Microsoft	18
	Miramar Systems	39
N	NEC	19
	NetScreen	36
	NFR Security	10
	Novell	1,8,19,53,54
O	Oracle	8
P	Phoenix Technologies	29
	Power Quest	39
R	Riverstone Networks	12
S	Sun	1,14
	Symantec	39
T	Time Warner Telecom	23
	Tranxition	39
	Tripwire	10
V	Verizon	23
	VIPswitch	25
W	WebTrends	29
Y	Yipes Communications	23

## ADVERTISER INDEX

Advertiser	Page #	URL
3Com	18	<a href="http://www.3com.com">www.3com.com</a>
Computer Associates	2-3	<a href="http://www.ca.com">www.ca.com</a>
Crenlo Inc	45	<a href="http://www.emcor-crenlo.com">www.emcor-crenlo.com</a>
DLTape Technology	13	<a href="http://www.NWD.superltttechnology.com">www.NWD.superltttechnology.com</a>
Foundry Networks	55	<a href="http://www.foundrynetworks.com">www.foundrynetworks.com</a>
Gadzoox Networks Inc	15	<a href="http://www.gadzoox.com">www.gadzoox.com</a>
Hergo Ergonomic Supplies	44	<a href="http://www.hergo.com">www.hergo.com</a>
Hewlett Packard	4, 38	<a href="http://www.hp.com">www.hp.com</a>
IBM	56	<a href="http://www.ibm.com">www.ibm.com</a>
Microsoft Corp	20-21	<a href="http://www.microsoft.com">www.microsoft.com</a>
Network Instruments	46	<a href="http://www.networkinstruments.com">www.networkinstruments.com</a>
Network Technologies	44	<a href="http://www.nti1.com">www.nti1.com</a>
Platform Computing	11	<a href="http://www.siteassure.com">www.siteassure.com</a>
Qwest Communications Int'l	9	<a href="http://www.qwest.com">www.qwest.com</a>
Rackit Technology Corp	47	<a href="http://www.RackitTechnology.com">www.RackitTechnology.com</a>
Rantan Computer	47	<a href="http://www.rantan.com">www.rantan.com</a>
Riverstone Networks	26-27	<a href="http://www.riverstonenet.com">www.riverstonenet.com</a>
Rose Electronics	46	<a href="http://www.rose.com">www.rose.com</a>
Server Technology	44	<a href="http://www.servertech.com">www.servertech.com</a>
Sony Corp	6	<a href="http://www.aitape.com">www.aitape.com</a>
Supercomm	28	<a href="http://www.supercomm2002.com">www.supercomm2002.com</a>
Unisys Corp	16-17	<a href="http://www.aheadforebusiness.com">www.aheadforebusiness.com</a>
Western Telematic	43	<a href="http://www.wti.com">www.wti.com</a>
World Data Products	47	<a href="http://www.wdp.com">www.wdp.com</a>
Network World Fusion	www.nwfusion.com	
American Power Conversion Network Associates		
Aura Networks, Inc		Nexsi Systems
Brocade		Opticom, Inc
Cisco Systems		Radware
Compaq		SAP
Computer Associates International		Siemens
DataCore		Stalker Software
F5 Networks		Sumitomo Electrical
Gensym Corporation		Sygate Technologies, Inc
IBM		Veritas
Intel		WaveSmith Networks
Mangosoft, Inc		WebSense
NetScaler		
Qwest Communications Int'l		
Rackit Technology Corp		
Rantan Computer		
Riverstone Networks		
Rose Electronics		
Server Technology		
Sony Corp		
Supercomm		
Unisys Corp		
Western Telematic		
World Data Products		

These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

\*Indicates Regional Demographic

## Sales Offices

Carol Lasker, Associate Publisher/Vice President  
Jane Weissman, Sales Operations Coordinator  
Internet: clasker, jweissman@nw.com  
(508) 460-3333/FAX: (508) 460-1237

NEW YORK/NEW JERSEY

Tom Davis, Associate Publisher, Eastern Region  
Elisa Della Rocco, Senior District Manager  
Terry Sanders, Account Executive  
Aimee Jacobs, Sales Assistant  
Internet: tdavis, elisas, tsanders, ajacobs@nw.com  
(201) 587-0090/FAX: (201) 712-9786

## NORTHEAST

Donna Pomponi, Regional Sales Manager  
Kathryn Zinn, District Manager  
John Mahoney, Account Executive  
Caitlin Horgan, Sales Assistant  
Internet: dpomponi, kzinn, jmahoney, chorgan@nw.com  
(508) 460-3333/FAX: (508) 460-1237

## MID-ATLANTIC

Jacqui DiBianca, Regional Sales Manager  
Marta Hagan, Sales Assistant  
Internet: jdibian, mhagan@nw.com  
(610) 971-1530/FAX: (610) 975-0833

## MIDWEST/MARYLAND

Eric Danetz, Senior District Manager  
Aimee Jacobs, Sales Assistant  
Internet: edanetz, ajacobs@nw.com  
(201) 587-0090/FAX: (201) 712-9786

## CENTRAL

Dan Gentile, Midwest Regional Director  
Gracie Vela, Sales Assistant  
Internet: dgentile, gvela@nw.com  
(512) 249-2200/FAX: (512)

# Customers applaud latest Novell reorganization plan

BY DENI CONNOR

**PROVO, UTAH** — Customers say Novell's latest shake-up — a reorganization outlined last week that involves emphasizing e-business consulting over software and includes a revamped sales channel strategy — may be just what the foundering company needs.

The changes at Novell, first reported earlier this month by *Network World* (www.nwfusion.com, DocFinder: 5232), are the result of Novell's just completed merger with consulting firm Cambridge Technology Partners (CTP). The changes are being orchestrated by new Novell CEO Jack Messman, who is aiming to boost revenue with a much more customer-oriented sales focus and with the 2,800 consultants he brings with him from CTP.

"It only makes sense that the 'new Novell' will have a focus on consulting and the products that require consulting services, such as DirXML, [Novell Directory Services] eDirectory and storage technologies like iFolder," says Terry Rodecker, senior network administrator for Mid-First Bank in Oklahoma City.

"Given the situation with the company, a consulting and services model makes a lot of sense. Look at IBM [with its services model] — they are becoming a template for companies that need to get growth going again," says Rocco Esposito, CTO for window-covering manufacturer Hunter Douglas in Upper Saddle River, N.J.

To deliver on its new ser-

## The new Novell

**Cambridge Technology Partners' influence will be felt heavily in Novell's reorganized sales group.**

### Executive management

**Jack Messman**, CEO

**Stewart Nelson**, COO

**Marty Deise**, senior VP, Solutions

**Ron Foster**, senior VP and COO

**Carl Ledbetter**, senior VP and CTO

**Ken Anderson**, senior VP and CIO

**Rich Nortz**, senior VP, Operations

**Darrin Richins**, VP, Marketing

### Sales management

**Carv Moore**, president, Novell Americas

**Rhonda O'Donnell**, president, Novell Asia Pacific

**Gerard Van Kemmel**, president, Novell EMEA

**Hitoshi Yoshida**, president, Novell Japan

**President**, Novell Latin America

### Where they came from

Cambridge Technology

Novell

Cambridge Technology

Novell

Novell

Novell

Novell

Novell

Cambridge Technology

Cambridge Technology

Cambridge Technology

Cambridge Technology

Not filled yet

vices-oriented strategy, Novell will attempt to clear up what has been a muddled sales channel of late.

The company will now sell to large corporations directly and through systems integrators, where appropriate. Novell will

rely on value-added resellers for sales to small and midsize businesses.

"We have to work with our channel partners so they understand where their skills are and where Novell's skills are," Messman says.

"We have to do a better job at developing services, products and solutions that the channel can sell to small and medium enterprises. In the past, our channel strategies have overlapped with our channel partners. We're not going to do that anymore," he adds.

"If Novell really wants to bring the channel back into this, they have to do a much better job of training people on the products available and keeping them informed of any changes," Rodecker says. "Remember, Novell's channel was once the envy of the industry."

Large enterprise users look at this new channel strategy as a

possible boon to them.

"As a large Novell customer, we have longed for the ability to purchase products directly from Novell," says Chip DiComo, network manager for shipping firm Hellman Worldwide Logistics in Miami. His company has obtained consulting services directly from Novell, he says.

Novell will also focus on specific vertical markets such as financial services, communications, government, education and healthcare, and offer those markets customer relationship management, enterprise resource planning and enterprise application integration services.

The company's research and development dollars will go toward technologies in emerging growth areas, such as directories, caching, storage and collaboration, according to internal Novell documents obtained by *Network World*. □

**Messman,**  
continued from page 1

competitor [I won't name] who is known to have less than best-of-breed products, but that integrates those products so tightly the company provides a convenience to the consumer. If we can tightly integrate the Novell products into a vertical market, we will have a competitive position.

**Novell has shown a lot of resistance to change in the past. How are you going to turn that around?**

I admire those people who have supported Novell technology over the years and have contributed to making Novell as successful as it is. We don't have to abandon those technologies. We are going to show them a new way to grow our business. You have to get to know your clients very well. You work at the CEO level rather than at the technologist level. When you have a stronger relationship with your client, you find ways to create business that you hadn't thought of. Once we get the company growing again, this attitude toward some of the intransigence will go away.

**But how will you be successful at getting Novell to change?**

I am focused on culture and change. When I was in the oil business, where I attacked similar problems, I saw all these guys who acted like J.R. Ewing. I said I could create a competitive advantage if I had people that worked with customers better than the J.R. Ewings of the world. By working on culture and having a customer focus, I can create change. By customer focus I mean that in many companies only the people who deal with customers directly think they know what the customer wants. That's wrong.



**"The best products don't always win. It's how you integrate them."**

Jack Messman, CEO, Novell

are going to continue those products.

**Who will Novell be selling those products to — your installed base or new customers?**

I hope both. Obviously, the existing customers like the products. They continue to upgrade. But with a solutions-orientation and different approach to the market, we can capture some new customers. There is a trend in the marketplace where customers don't care which hardware or software they use; they care about the solution. If we can deliver a solution that works for them and has a great return on investment, many companies will not care what products are included. We are going to do very well by including GroupWise and NetWare. □

**Will there be future versions of products such as NetWare and GroupWise?**

The answer to that question is unequivocally yes. We

*Network World*, 118 Turnpike Road, Southborough, MA 01772-9108, (508) 460-3333.

Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #0385662. *Network World* (ISSN 0887-7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by *Network World, Inc.*, 118 Turnpike Road, Southborough, MA 01772-9108.

*Network World* is distributed free of charge in the U.S. to qualified management or professionals.

To apply for a free subscription, complete and sign the qualification card in this issue or write *Network World* at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1-508-490-6444.

Nonqualified subscribers: \$5.00 a copy; U.S. - \$129 a year (except Washington, DC, \$136.74); Canada - \$160.50 (including 7% GST, GST#126659952); Central & South America - \$150 a year (surface mail); Europe - \$205 a year (surface mail), all other countries - \$300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin.

Please include mailing label from front cover of the publication.

*Network World* can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zeb Road, Ann Arbor, Mich. 48106.

**PHOTOCOPYRIGHTS:** Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by *Network World, Inc.* for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of \$3.00 per copy of the article, plus 50 cents per page is paid to Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970.

**POSTMASTER:** Send Change of Address to *Network World*, P.O. Box 3090, Northbrook, IL 60065.



Copyright 2001 by *Network World, Inc.* All rights reserved. Reproduction of material appearing in *Network World* is forbidden without written permission.

Reprints (minimum 500 copies) and permission to reprint may be purchased from Reprint Management Services, Greenfield Corporate Center, 1811 Olde Homestead Lane, Lancaster, PA 17601, (717) 399-1900 ext. 124, rtr@rmsreprints.com.

USPS735-730

Get more information online.  
DocFinder: 5251  
[www.nwfusion.com](http://www.nwfusion.com)

## NPI: IT's responsibility

*"Nonpublic Personal Information (NPI) [means] nonpublic personal financial and personal health information. NPI includes any personally identifiable information about a customer which is provided to us ... whether such information is received from the customer themselves or from any outside source."*

— The Ameritas Acacia Companies Privacy Protection Policy ([www.ameritasacacia.com/privacy.htm](http://www.ameritasacacia.com/privacy.htm))

I just received a letter from Ameritas detailing its privacy protection policy that curiously does

not include the above definition. I suspect the omission is easily explained: The letter I received filled both sides of a single sheet of paper in 8-point type, and if the company had included the full text that it posts on its Web site, it would have to use two sheets of paper — too expensive for

something they don't really care about.

The rest of the privacy policy is the usual gobbledegook that, unless I am much mistaken, could be summarized as: "We know lots of private stuff about you and will share this data with anyone who we feel we have some kind of need to share it with. Now, go back to being a good little sheep."

Just check out the section "Disclosure of Customer NPI" on the Web site, a list of companies/organizations the company may share NPI with. Let's just say they cast the net awfully wide.

Moreover, if your information is passed on to another company, the Ameritas policy doesn't say how they will transfer your data and with what assurance of accuracy, or how they will enforce or audit other companies they give your data to.

Ameritas isn't alone in its privacy practices. Such cavalier

behavior is commonplace and — given current law — completely legal.

What I wonder is what IT is doing about it. We have a responsibility to, if you'll excuse the grand phrase, "do the right thing."

If the vice president of marketing asks the CIO to transfer the records for all customers known to be suffering from cancer to some pharmaceuticals outfit, the CIO should ask: Why? Who is the recipient? Have we audited its data-handling practices and is its privacy policy in line with ours?

In the case of Ameritas, the company has appointed a chief privacy officer, and one would hope that such concerns would be handled by someone in his position, but where's the accountability? Sure, if you catch them and can afford to take a multibillion-dollar corporation to court, you might get some satisfaction, but don't count on it.

And just check out the following: "We do not disclose NPI ... without first notifying the customer in writing of our plans, providing the customer with an opportunity to 'opt out' of the disclosure." So if the notice they send me goes missing in the mail they can assume I haven't opted out! What a crock!

Most organizations that plan to share NPI with other entities don't really appreciate that electronic data is more dangerous and harder to control than paper-based data.

They don't realize that they instantly lose control once they share data. Indeed, in most companies assuring that data even stays private internally is next to impossible.

As an IT professional you should be proactively involved in making sure your organization acts responsibly and ethically with regard to NPI because it is most likely that non-IT staff will not begin to understand the issues beyond the basics that the law demands.

*What do you do about ensuring your outfit plays nicely with NPI? Confessions to [nucolumn@gibbs.com](mailto:nucolumn@gibbs.com).*



MARK  
GIBBS



**As if Novell doesn't have** enough trouble, now the company has to fight a false rumor that it is about to pull the plug on GroupWise.

An artfully spoofed e-mail purportedly from former CEO Eric Schmidt is bouncing around the Internet with the unfounded message that Novell's messaging software — No. 3 in a market dominated by Lotus Notes and Microsoft Exchange — will be discontinued Jan. 1.

"It's spreading like wildfire through the GroupWise community, and it's being taken as legitimate, even though it's not," says a Novell employee.

A GroupWise administrator in Detroit received the e-mail, and, unsure of its authenticity, sent it to the popular NGW mailing list. "Which was like looking for a gas leak with a match," says my source, as the phony message then began to circulate at Internet speed. Novell was left scrambling to reassure customers and head off real damage.

One reason the rumor achieved momentum was it could not be easily dismissed: Novell is indeed reshuffling its product lineup, and who's to say GroupWise wouldn't be a casualty? (New CEO Jack Messman promises that won't be the case in an interview on page 1 of this issue.)

Two other reasons for the wildfire, however, are the ease with which e-mail can be spoofed ... and the gullibility with which so many people assess anything that lands in their in-box.

A fresh report from Jupiter Media Metrix predicts that e-commerce conducted over Web-enabled telephones will account for about \$4 billion — not this year, not next, but in 2006.

And, while \$4 billion may sound like a significant chunk of change, Jupiter points out that it will constitute only 2% of online shopping five years hence. As for this year, the researchers expect that total to reach a paltry \$22 million.

Allow me another spin at that 2006 projection: Back the travel and entertainment industries out of the \$4 billion, and mobile commerce stands roughly alongside your county flea market in terms of important sales channels for most companies.

The Jupiter folks strained to find a silver lining in their bucket of ice water, positing "that shopping-related content on mobile devices will influence transactions online via PCs, and offline in brick-and-mortar stores." Moreover, they see such devices playing a bigger role in customer relationship management.

Still, the report should raise a basic question for those who are contemplating major investments in the infrastructure necessary to fully extend online sales operations to mobile devices:

Might that money be better invested serving customers who already exist?

We like to think of 'Net Buzz readers as intellectually well-rounded network professionals; the antithesis of geek stereotypes. ... And we're pleased to report that our faith in this proposition has been reinforced.

Last week we heard from a reader who told of having seen a list of Web links referred to as a "hypheography."

"This was supposed to be the Web equivalent of bibliography, 'hyphe' being Greek for 'web,'" he said.

That observation prompted an invitation from yours truly for someone to explain the word "hyphen." So up to the plate steps Jim Cooper (or, as we'll dub him here, Professor Cooper):

"The origin of 'hyphen' is unrelated to 'web.' Hyphen is composed of two words: 'hypo' and 'hen.' The 'o' is omitted in combining the words, just as we do in English with contractions. Hypo is a preposition with the basic meaning 'under'; hen is the neuter form of the word that means 'one.' Hyphen is used to indicate that multiple words are to be treated as one.' Thanks for the rare opportunity to exercise my classical Greek."

No, professor, thank you.

Feel free to chime in. The address is [buzz@nww.com](mailto:buzz@nww.com).



PAUL  
MCNAMARA



## AT 178 MPPS, WHO CARES ABOUT AERODYNAMICS?

Scaling up to 178,000,000 packets per second of throughput and 480 Gigabits per second of total switching capacity, the BigIron family of Layer 3 switches leaves competitors floundering in its wash. This isn't just a revolution in speed.

It's an evolution in modular design. With scalability of up to 120 Gigabit Ethernet ports, BigIron offers the highest Gigabit density per rack in the industry. And BigIron supports multi-protocol routing including IP, IPX, Appletalk, OSPF, BGP4 and multicast protocol standards. Best of all, the BigIron family protects your investment—all BigIron modules are interchangeable among the BigIron 4000, 8000 and 15000. So if you care about network performance, call Foundry Networks at 1.888.TURBOLAN (887-2652), email [info@foundrynet.com](mailto:info@foundrynet.com) or go to [www.foundrynetworks.com/nw1](http://www.foundrynetworks.com/nw1). We'll get you up to speed.



FOUNDRY  
NETWORKS



IBM, WebSphere, and the e-business logo are registered trademarks of IBM Corporation in the United States and/or other countries. Other products and services may be trademarks or registered trademarks of their respective companies. IBM does not guarantee comparable results.

**IBM**

**IN THEIR SEARCH FOR BETTER SOFTWARE, THE VISITORS FROM A PARALLEL UNIVERSE FIND**

# **WEBSPHERE® FOR E-COMMERCE**

**HELPED WHIRLPOOL®'S B2B AND B2C SOLUTIONS ACHIEVE 100% ROI IN LESS THAN 9 MONTHS**

 **e-business software**

[ibm.com/websphere/ecommerce](http://ibm.com/websphere/ecommerce)

**IT'S A DIFFERENT KIND OF WORLD.  
YOU NEED A DIFFERENT KIND OF SOFTWARE.**